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Illinois Rural Electric News





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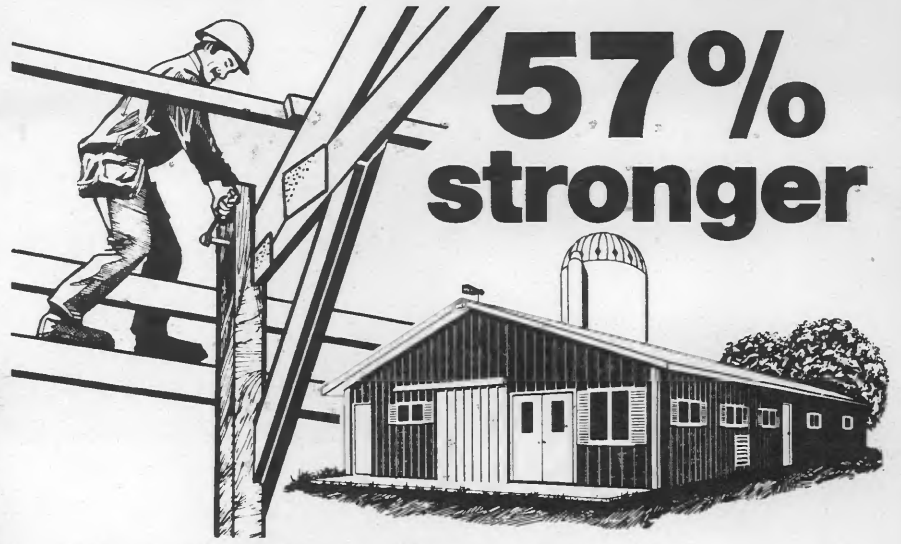
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Eighth wonder of the world

(Editor's Note: The following is taken from the Rural Development and Rural Electric and Telephone Systems sections of the United States House Appropriations Committee report on the Agriculture, Rural Development, and Related Agencies Appropriation Bill for 1982. The report was approved July 9.)

A strong and productive agriculture requires the maintenance of healthy, happy and productive people on the nation's farms. In addition to programs to provide stability of income to farm producers, programs designed to improve the quality of life in rural areas are also important to the health, comfort, and happiness of rural people.

The Rural Electrification Administration was established by Executive Order 7037 of May 11, 1935, to make loans for the extension of central station electric service to unserved rural people. The Rural Electrification Act of May 20, 1936, made the program permanent. Public Law 423 amended the act in 1949 to authorize loans for furnishing and improving rural telephone service.

There are few programs which have contributed more to the well-being and productivity of people living and working in rural America. They have brought rural areas "out of darkness" into a way of life comparable to that previously found only in urban centers.

Rural electric and telephone systems have had a significant impact on the economic development of the areas in which they are located. Electricity and telephones have become indispensable to the operating efficiency of the nation's farms. They are responsible, in part, for the remarkable achievement of American agriculture.

At the beginning of 1980, electric service was being provided to over nine million rural consumers and telephone service was being provided to over four million subscribers — a remarkable achievement. Much of the equipment used to provide this service, however, was installed ten or more years ago, and must gradually be replaced or upgraded to continue to provide adequate service.

The Committee is proud of the support it has given to the basic rural electrification legislation through the years. In addition, it has provided adequate funds through this annual appropriation bill to help these programs to meet the need. The Committee has insisted through the years that the programs be expanded on an "area coverage" concept, to assure electricity and telephones at the end of the line in sparsely populated areas, as well as in the areas adjacent to more densely populated centers.

To assure such expansion, the Committee has frequently added or restored loan funds for these purposes. While these have represented temporary increases in government outlays, the repayment record of REA borrowers has been so good that the final cost to the taxpayer has been nil. Such expenditures have been an invaluable long-term investment in the development of rural areas, with benefits to both rural producers and urban consumers. Not only has life on the farm been made livable, but the availability of electricity and telephones as farm production tools has modernized American agriculture and helped to make it the "Eighth Wonder of the World."

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In this issue

Larry F. Elledge Editor	Washington tour	4 and 5
Gordon M. Olsen Managing Editor	Energy efficiency	6
Jack D. Halstead Associate Editor	Ground fault interrupters	8 and 9
Sandra S. Jordan Advertising Coordinator	Water-to-air heat pumps	12 and 13
	Recipes	14
	Jo-Carroll picks Stuva	15
	Powerchuting	16 and 17
	Trading Post	18
	Patterns	19

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Cover: During the Youth to Washington Tour in June, participants were able to visit many historic sites in and around Washington, D.C., including George Washington's Mt. Vernon. (See story on pages 4 and 5.)

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Near right: First stop on the tour to Washington was at the Gettysburg National Military Park. Far right: The bright yellow name badges identify the touring Illinoisans as they visit the John F. Kennedy gravesite. Below: The young tourists posed in front of Thomas Jefferson's stature at the Jefferson Memorial.



Hot weather, packed itinerary greet



Fifty-six high school students, sponsored by 18 Illinois electric cooperatives, and their eight chaperones faced near record-breaking temperatures and humidity during most of their days on the 1981 "Youth to Washington" tour. But, despite the oppressive weather, the Illinois representatives gamely kept to an event-filled itinerary that gave them a look at their nation's capital that few tourists ever have.

The week-long tour began on Friday, June 12, as the students gathered beneath stormy skies at the headquarters of the Association of Illinois Electric Cooperatives in Springfield. The group boarded the two buses that afternoon and headed east.

The first sightseeing stop was made the following morning at Pennsylvania's Gettysburg National Military Park, site of the greatest battle of the Civil War. The travelers visited the Cyclorama Center where they saw a film on the battle and viewed the Gettysburg Cyclorama, a painting of Confederate George Pickett's famous charge, featured in a sound and light show. Following that, the park guides led the Illinois delegation on a bus tour of the town of Gettysburg and the battlefield.

Upon arriving at their hotel in



Youth Tour participants

Arlington, Virginia, in late afternoon, the Illinois group was joined for the week by six students and two chaperones from the Sulphur Springs Electric Cooperative in Willcox, Arizona. The Illinois tour had been recommended as a model to the cooperative, so the Arizona group arranged to accompany the Illinois delegation. The Arizona cooperative wants to develop a state-wide Youth to Washington tour.

The Illinois youths held a mock annual meeting that evening and elected Michelle Richter of Breese, sponsored by Clinton County Electric Cooperative, as the Illinois representative on the National Rural Electric Cooperative Association Youth Consulting Board. Among her other duties, Michelle will be attending the 1982 NRECA Annual Meeting in Atlanta.

After church services Sunday morning, the delegations visited Mt. Vernon to tour George Washington's home and grounds. From there they went to Arlington National Cemetery. The youths took an excursion tram through the cemetery, making special stops to visit the graves of John and Robert Kennedy and to watch the changing of the guard at the Tomb of the Unknown Soldier.

A boat cruise on the Potomac River

with electric cooperative youth representatives from other states wrapped up the day.

Monday was kicked off with a breakfast hosted by Representative Paul Simon. That was followed by tours of the U.S. Capitol, the U.S. Supreme Court Building and the National Archives, which has on view the Declaration of Independence, the Constitution and the Bill of Rights. A tour of the Gothic-style Washington National Cathedral preceded a visit to the National Rural Electric Cooperative Association headquarters. The day's activities concluded at the Twin Bridges Marriott Hotel with a get-acquainted party, complete with talent show, sponsored by NRECA.

A guided tour of the Federal Bureau of Investigation headquarters headed Tuesday's itinerary. From there the Illinois delegation went to visit the Library of Congress before sitting down to a luncheon hosted by Representative Paul Findley. Joining Findley to speak on some of the issues facing Congress was Representative Edward Madigan. Arizona Congressman Morris "Mo" Udall, visiting with his homestate youth delegation, also spoke to the group.

That afternoon the electric cooperative delegations observed some of the

workings of the U.S. Senate from the gallery as guests of Senator Charles Percy. That was followed by a visit with Senator Alan Dixon, who provided the group some background on the working of Congress.

Visits to various memorials rounded out the day. The U.S. Marine Corps War Memorial, depicting the famous flag-raising at Iwo Jima, was the site of a spectacular Marine sunset review parade, while an elevator ride up the Washington Monument let the students see the beautiful city by night.

Wednesday was "Rural Electric Youth Day." More than 900 youths from 26 states and six foreign countries gathered at the Twin Bridges Marriott to hear remarks by Harold V. Hunter, Administrator-designate, Rural Electrification Administration, and Robert Partridge, NRECA general manager. Featured speaker was Dr. Margaret Maxey, assistant director of the South Carolina Energy Research Institute. Her topic was "Our Energy Future: A Missing Perspective."

After lunch, the youth day participants traveled to the White House and were addressed on the lawn by Secretary of the Interior James Watt and Presidential Assistant for Public Liaison Elizabeth Dole. Later, the Illinois and Arizona groups toured Ford's Theatre, site of President Lincoln's assassination, and the Jefferson Memorial before returning to the Marriott for an all-states dinner and dance.

The final day of the "Youth to Washington" tour began with a tour of the U.S. Bureau of Engraving and Printing. Next was a visit to the Smithsonian complex. Some of the popular stops were the National Air and Space Museum, which has among its more notable exhibits Lindbergh's "Spirit of St. Louis" and the Apollo 11 Command Module, and the National Museum of Natural History, which features in its Hall of Gems the world-famous 45.5-carat Hope Diamond and the 330-carat Star of Asia sapphire.

Following that, the group toured the U.S. Department of Agriculture. A stop at the Kennedy Center for the Performing Arts concluded the tour schedule and the travel-weary students boarded the buses for an overnight drive to Springfield.

Heat pump water heaters offer savings potential



The concept of heating water with a heat pump has been revived due to the continuing rise in energy costs. Heat-pump water heaters are not new; in fact, they appeared as early as the 1950's. At that time, however, energy was cheap, and the materials to make the heat pumps were expensive and some basic design problems were still unsolved. Now, with energy costs being considerably higher and heat-pump technology well established the concept has been revived. Industry and government-sponsored tests in widely separated parts of the country show consistent savings ranging from 35-60 percent in homes that rely on conventional energy sources for water heating (excluding natural gas).

How does the heat-pump water heater work? The heat-pump water heater runs on electricity just like the conventional electric water heater. It operates on the same principle as a refrigerator, only in reverse. An electric-resistant element converts electricity on a 1:1 basis: for each Btu of electric energy used you get one Btu of heat energy. Engineers call this ratio of heat output to energy input the Coefficient of Performance (COP). A heat pump can have a higher COP because it uses standard refrigeration techniques to absorb the heat from the surrounding air resulting in a 2:1 to 3:1 COP, or much greater efficiency.

The water heating heat pump

utilizes two separate circuits: 1) a non-reversing refrigerant circuit, and 2) a water circuit to absorb heat from the air and release it into the water.

The heat-pump water heater uses a liquid (refrigerant) with a low boiling point to absorb heat from the surrounding air. This turns the liquid into a vapor that is compressed by a pump which heats it further. The vapor, in turn, heats the water by utilizing a conventional heat exchanger. In the process, the vapor condenses into a liquid and the cycle repeats until the water reaches the desired temperature, usually 140 degrees F.

The average unit manufactured today heats water at the rate of 12,000 Btuh, equivalent to an output of a 3800-watt high recovery resistance heating element. The average output is approximately 18 gallons per hour of 140 degrees F. water at an ambient temperature of about 60-80 degrees F., but only consumes approximately 1250-1450 watts of electricity. This is approximately one-third less than a resistance element's consumption. According to manufacturers, the potential savings can be high, particularly since heating water uses more energy than any other household job except space heating and cooling.

Since the heat-pump water heater is a one-piece device that must be

located inside, a person should consider carefully the location of the unit. The unit should be located in an area where it can absorb as much wasted heat as possible. Since the unit works by removing heat from the surrounding air and transferring it to the water, you should ask yourself where this heat comes from during winter months. Typical winter waste heat sources are oil or gas furnaces and ducting, clothes dryers and wood burning stoves. The heat pump is most efficient during the summer months when the cooling and dehumidification effect of the unit are beneficial.

The unit will not operate efficiently in area with temperatures below 45-50 degrees F. Freezing can occur, resulting in a burst water coil pump if the temperature falls below 32 degrees F. If the unit is placed in a crawl space, the crawl space vents should be closed to prevent the unit from freezing. Ideal locations are basements, utility or laundry rooms with a minimum volume of 1,000 cubic feet. The unit should be installed at least 6" from the wall to ensure adequate air flow and should not be installed in closets unless there is good ventilation through completely louvered doors.

The two basic designs of the water heating heat pump are the built-in heat pumps, and the existing water tanks fitted with the heat-pump unit. If you are an experienced do-it-yourself installer, manufacturers have a unit designed for easy replacement or new installation. The installation kit should be complete and should only require a few simple tools. The electrical connections are simple as well. Units are available in 115- and 230-volt models and simply plug-in to the appropriate outlet.

Researchers at the U.S. Oak Ridge National Laboratories have studied the operation of this unit and, on the basis of an average family's hot water usage and average electric rates, have estimated a pay-back period of about two-three years. This will vary with individual cases, of course, based on the location of the unit and inlet water and ambient air temperature.

If you would like further information about the heat-pump water heater, please contact your local cooperative's energy adviser.

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Safety should be the utmost concern for anyone who works with electricity. This invisible force that does so much to enhance our lives can also kill, if proper safety precautions are not taken.

Among those precautions is the ground fault interrupter (GFI), a device which senses imbalances between the amperage flow levels of the hot conductor and the neutral conductor. This imbalance can be created by a short to ground of an appliance, for example, an electric drill. By sensing what may be only a minute difference, the GFI acts to break the circuit, thus stopping the flow of electricity to the shorted appliance or tool, and preventing a serious, or even fatal electric shock to the person using the equipment.

An electrical circuit is made up of three parts: a source, a conductor and a load. The source is your electric service panel, the conductor is your house wiring, and the load is the appliance or tool plugged into your outlet. To prevent damage to the electrical system or the appliance or tool, a breaker or fuse is installed to shut down the particular circuit if the load placed on the circuit exceeds a certain amperage limit, such as 15 amps, a relatively common limit. The breaker senses only that the load is greater than the breaker or fuse limit, and senses only that amperage on the hot conductor. It does not determine where the flow of current is going, nor how much is being returned on the neutral conductor. You could have up to 15 amps going to ground, perhaps through your body, and still not trip the breaker and shut off the circuit.

Ground fault interrupters go one important step further. They sense the current flowing through the neutral conductor. In a correctly wired and safe circuit the current leaving the load on the neutral will be exactly the same as that going into the load from the hot conductor. When there is the least bit of difference (as little as

5/1000 of an amp), the GFI breaks the circuit immediately, perhaps saving the life of someone using an appliance or tool that is shorted out.

The importance of the GFI prompted one electric cooperative, Illinois Rural Electric Co. (IREC), to install the GFI as a basic part of its member education program. George Lindsey, IREC member service manager, says the cooperative uses a special demonstration model to show how the GFI works. "We built it about 8-10 years ago for the 4-H

electrical school we have each year, and we used it last winter during an adult working school."

Lindsey's unit consists of an electrical panel with both a conventional breaker circuit and a GFI circuit, outlets for each circuit, a shorted electric drill, a small light fixture and bulb, and a holder for a weiner Lindsey uses to demonstrate what happens when electricity passes through flesh.

The GFI demonstration during the schools usually draws a great deal of interest, and was of special interest during IREC's first adult wiring school.

Lindsey's demonstration includes two parts. First he connects the drill cord to the breaker outlet. As the drill motor runs, he touches a wire from the light fixture to the metal drill motor case, diverting electrical current from the shorted motor to the light. The bulb lights up, graphically demonstrating the current that could be flowing into the drill operator's body.

Then Lindsey plugs the drill motor cord into the GFI circuit and goes through the same procedure. However, at the instant he touches the light fixture wire to the drill motor, there is the snap of the GFI breaking the circuit. Had the drill been in the hands of



Lindsey's demonstrator



IREC members observe demonstrator during school

an operator, no electric shock would have occurred. Usually, onlookers want to see the whole thing again. Lindsey obliges, after resetting the GFI.

The National Electrical Code (NEC) calls for GFI installation in a number of instances, including bathrooms, garages, outside outlets and around swimming pools.

The reasons for such NEC requirements are obvious. Many small electrical appliances — hair dryers, razors, tooth brushes, etc. — are used in the bathroom. While users are cautioned against operation of such devices near or over a sink or tub of water, it is essential that the GFI be used to prevent any accidental entry of a connected appliance into water.

The requirements for garages and outdoor outlets apply mainly for use of tools and lawn care equipment.

NEC provisions apply to conventional and mobile homes. Local codes may vary, so persons building a new home should be sure they use a qualified electrician. Your electric cooperative can assist you with information about the GFI. The GFI can be added to existing homes, too. Again, consult qualified people.

Lindsey points out a number of tips for those interested in installing and using the GFI. They must be installed properly, he says. The GFI which is to replace a conventional breaker requires special connection to the neutral conductor, to provide for sensing of the neutral amperage. The unit should be tested periodically, about every 30 days. Be sure the GFI matches your breaker equipment, and have a qualified electrician do the work.

In the event a home is equipped with a fuse panel, a subfeed can be built off the fuse panel to a new breaker panel for the circuit you wish to place on a GFI.

In addition to the breaker-type GFI, there are two other types. One is the outlet type, which fits into a regular receptacle outlet box, replacing the regular duplex receptacle. The other is the portable type, which can be moved from place to place and plugs into any existing 110-120-volt receptacle outlet.

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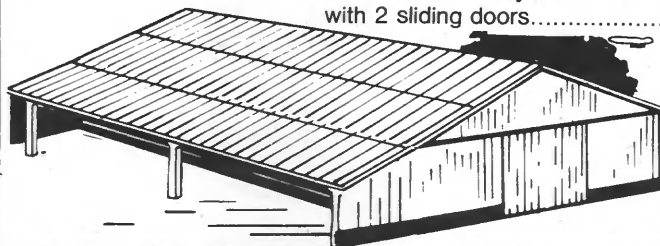
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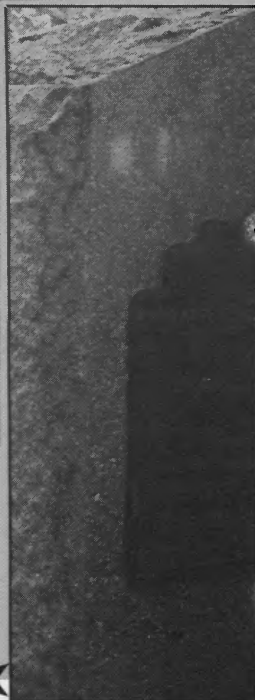
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Youth Tour 81



(Clockwise from left) Tour participants examine a cannon outside the Cyclorama Center at Gettysburg, Pennsylvania. The Illinois and Arizona "Youth to Washington" delegations pose on the Capitol steps before visiting the Senate gallery. Tour members' necks are arched as the group looks at an interesting piece of Capitol Building architecture. Michelle Richter of Breese, representing Clinton County Electric Cooperative, Inc., was elected Illinois representative to the NRECA Youth Consulting Board. Illinois youths enjoy a view of the Pennsylvania countryside from Little Round Top, site of a critical skirmish during the Battle of Gettysburg. Hot, tired feet get a rest at the U.S. Supreme Court Building.

Water-to-air heat pumps Innovative systems use ground water and reservoir

Improved efficiency in heating and cooling was of primary interest for Illinois electric cooperative power use/member service representatives during a June conference in Quincy, and innovative heat pump systems in two

western Illinois homes provided on-site examination opportunities for the group.

Some 30 participants in the conference visited the homes of Donald I. Kerr, Jr., of Warsaw and

Eugene Rabe of Mendon to see installed water-to-air heat pumps in operation.

Both systems represent an effort by the homeowner to take advantage of their particular situation to save energy and money.

"We decided to go with the water-to-air heat pump when we built our new house," Rabe told the group, "because we had to build a fairly large reservoir anyway. We needed it for our livestock and, since we live in the country, we needed it for fire protection, too. I talked to Marvin Hall, our area agriculture advisor, and he said it just made sense to use it for our heat pump, since it was there."

Rabe's reservoir holds about 28,000 gallons of water, and the heat pump uses and returns 4.5 gallons a minute. Water goes into the pump at 56 degrees F. and comes out at 42 degrees, Rabe says. The heat pump used 5,050 kilowatt-hours from January through May this year, and until he shut it down to clean the reservoir. The Rabes heat about 3,700 square feet in their three-year-old home.

Kerr also talked to Hall before choosing a heating system, and he talked to others, too. He visited with Ken Kober, staff assistant at Western Illinois Electrical Coop., Carthage, and visited an energy fair in Quincy.

"We're down in the Mississippi River bottoms," Kerr says, "and we get water at 14 feet with a sand point and the supply is steady, so we decided to use a water-to-air heat pump for that reason. It's worked well for us."

In addition to the heat pump, Kerr took some additional steps to save energy by building an extraordinarily well insulated home. After studying construction techniques of the "Arkansas Home," which features two-by-six studs on 24-inch centers, and the University of Illinois' "Lo-Cal

Protecting a valuable asset

You've insured your house, your car . . . probably even your stereo and television set. But, did you ever stop to think about your most valuable asset? You depend on good health in order to work and bring home your family's income. Isn't that an asset also worth protecting?

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Kerr installed two pumps; one for domestic water, the other for the heat pump. He believes the precaution was unnecessary, but it provides piece of mind. Below, east and west facing living room windows are tinted to minimize summer heat gain. The double glazed windows are wood framed to prevent heat loss during the cold months.



Home with two two-by-four studwalls, he decided to build his house with two-by-eight studs, with a brick facing, and keep the window area down to about nine percent of the floor area. East and west facing living room windows are of tinted glass, in wood frames.

"I wanted to build with two-by-eights on 24-inch centers," Kerr laughs, "but the builder was an old-time carpenter and he swore he'd never built anything on 24-inch centers, and he wasn't about to start. We almost went to the mat on that one, but he won out. We put two thicknesses of 3½-inch batts in the stud cavities, and sheathed the house with half-inch plywood."

The house also features a certain amount of earth shelter in that the basement was built at ground level and the earth built up around it to a depth of four feet.

Their heat pump heats about 3,200 square feet, and water which is pumped out of the ground goes through it and is then piped into a creek. It uses about 6.5 gallons a minute. Kerr built two separate water systems, one for domestic water, the other for the heat pump. "That" he says, "was probably unnecessary, but I was afraid that if I tried to make one pump do both jobs, the motor would overheat and burn out. I've got them interconnected so if one fails the other can do both jobs," he adds.

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TROPICAL ICE CREAM SAUCE

- 1/3 cup sugar
- 1 tablespoon cornstarch
- 1 cup water
- 2 tablespoons butter
- 1 cup flaked coconut
- 1 can (8 oz.) crushed pineapple in unsweetened juice, undrained
- 1/4 cup chopped pecans

Place 2 scoops strawberry ice cream and 1 scoop vanilla in each of 6 banana split dishes. Peel bananas; cut in half crosswise; then cut each half lengthwise. Place 3 pieces of banana in each dish between the scoops of ice cream. Spoon tropical ice cream sauce over top. Garnish each banana split with whipped cream and a cherry.

For tropical ice cream sauce, combine sugar and cornstarch in a small saucepan. Gradually stir in water. Heat to boiling, stirring frequently, until thickened. Cook 2 additional minutes, stirring occasionally. Add butter and stir until melted. Stir in coconut, pineapple and juice and nuts. Chill.

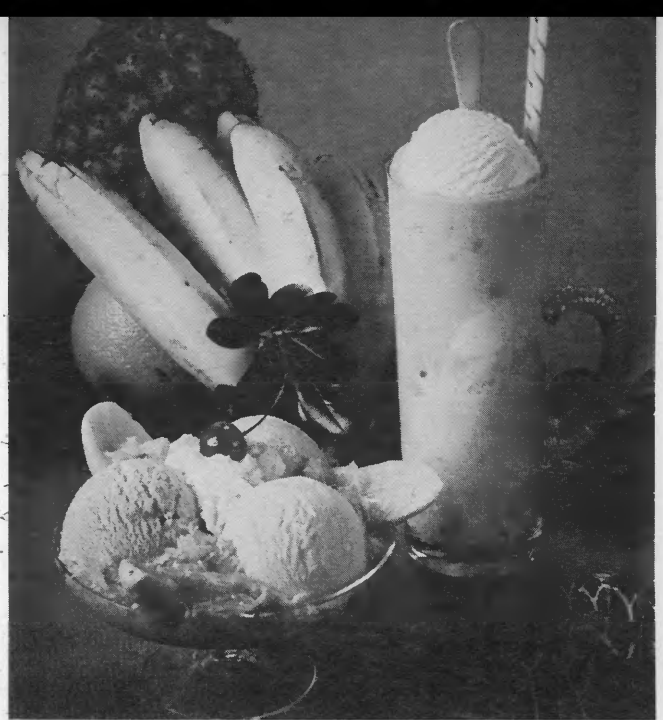
TROPICAL BANANA SPLIT

- 2 pints strawberry ice cream
- 1 pint vanilla ice cream
- 5 bananas
- Tropical ice cream sauce
- Sweetened whipped cream
- 6 maraschino cherries with stems

COOL PISTACHIO SALAD

- 1 pkg. (3 1/2 oz.) instant Pistachio pudding mix
- 1 carton (13 1/2 oz.) frozen whipped topping
- 1 can (8 1/4 oz.) crushed pineapple, drained
- 1 can (11 oz.) mandarin oranges, drained
- 1 cup miniature marshmallows
- 1 carton (12 oz.) small curd cottage cheese

Fold pudding mix into thawed whipped topping. Fold in remaining ingredients. Chill thoroughly before serving. Serves 10-12.



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TUNA 'N FRUIT SALAD

- 1 unpeeled apple
- 1 can (7-oz.) tuna fish, drained
- 1 cup grapes, halved and seeded
- 1 can (13 1/2-oz.) pineapple tidbits
- 1 cup chopped celery
- 1 tablespoon lemon juice
- 1/4 teaspoon salt
- 1 cup dairy sour cream or yogurt

Combine apple, tuna, grapes, drained pineapple and celery. Blend lemon juice and salt into sour cream, fold into fruit mixture. Serve on salad greens, top with chopped walnuts or mint.

ORANGE PIE CRUST

- 1 1/2 cups flour
 - 2/3 cup shortening
 - 1/2 teaspoon salt
 - 1 orange, grated rind and juice
- Cut shortening into flour and salt. Sprinkle on juice and rind. Use enough ice water to hold together. This pie crust is best used with fruit pies.

BANANA NUT TUBE CAKE

- 1 cup sugar
- 1/2 cup Crisco
- 3 eggs, beaten separately
- 2 cups flour
- 1 teaspoon soda — in flour
- 3 large mashed bananas
- 1 cup chopped nuts

Mix in order given, egg whites last. Bake in tube pan in slow oven for 40 minutes.

FRUITED CREAM SALAD

- 1 package orange gelatin
- 1 cup boiling water
- 1 pint vanilla ice cream
- 1 cup chopped pecans
- 1 small jar maraschino cherries, drained and cut
- 1 large can crushed pineapple, drained

Dissolve gelatin in boiling water. Add ice cream and stir until melted. Add cherries, pineapple, and pecans. Place in 2 quart mold and refrigerate. Serves 8 to 10.

BARBECUED RIBS

- 4 lbs. country-style ribs, cut in serving-size pieces
- 1 tablespoon butter or margarine
- 1 clove garlic, crushed
- 1/2 cup catsup
- 1/3 cup chili sauce
- 2 tablespoons brown sugar
- 2 tablespoons chopped onion
- 1 tablespoon Worcestershire sauce
- 1 tablespoon prepared mustard
- 1/4 teaspoon salt
- Dash bottled hot pepper sauce
- 3 thin lemon slices

Simmer ribs, covered, in salted water to cover till nearly tender, about 1 hour. Meanwhile, prepare barbecue sauce: In saucepan, melt butter or margarine; add garlic and cook 4 or 5 minutes. Add remaining ingredients; bring to boil. Drain ribs; grill over medium coals about 10 minutes on each side, brushing with sauce until well-coated.

GRAPE SHERBET

- 1 cup sour cream
- 1 cup milk
- 1/2 cups sugar
- 1 egg, well beaten
- 1 cup grape juice
- 1/4 cup lemon juice

Combine ingredients, mixing well. Pour into refrigerator trays and freeze until nearly firm. Turn mixture into a chilled bowl. Beat with chilled electric beater until fluffy but not melted. Return to trays, freeze firm.

FIVE CUP FRUIT SALAD

- 1 cup mandarin oranges
- 1 cup pineapple
- 1 cup miniature marshmallows
- 1 cup coconut
- 1 cup sour cream
- Pecans if desired

FIG PRESERVES

- 2 cups figs
- 2 cups sugar
- 1 (3-oz.) pkg. strawberry gelatin

Wash, cut or mash figs. Add sugar and gelatin. Boil together 9 minutes. This keeps good in freezer or you may process in water bath, like canned figs, place in jars and seal.

MANDARIN ORANGE CAKE

- 1 yellow cake mix
 - 4 eggs
 - 1 9-oz. carton whipped topping
 - 2 tablespoons sugar
 - 1 teaspoon vanilla
 - 3/4 cup cooking oil
 - 1 can mandarin oranges and juice
 - 1 can mandarin oranges and juice
 - 2 tablespoons sugar
 - 1 small can crushed pineapple
- Mix and bake at 350 degrees for 45 minutes in oblong pan or for 1 hour in Angelfood pan or bundt pan. Use this icing when cake is cool.
- Combine ingredients.

BLACKBERRY PIE

- 1 baked pie shell
 - 1 pint blackberries
 - 1 small pkg. blackberry jello
 - 3/4 cup boiling water
 - 2 tablespoons cornstarch
 - 1 cup water
 - 1 cup sugar
 - 1 small container of Cool Whip
- Bake pie shell until brown and set out to cool. Mix blackberry jello with boiling water and set aside. Cook 2 tablespoons cornstarch and 1 cup water and 1 cup sugar until thick and clear. Mix this with jello mixture and add blackberries. Refrigerate until chilled. Put in pie shell. Top with Cool Whip and refrigerate until ready to serve.

FRUIT FREEZE

- Crust
- 6 cups Rice or Corn Chex, crushed fine
- 1/2 cup sugar (set aside 1/3 cup of mixture to reserve for topping)
- 1 stick oleo

Melt oleo, pour into cereal/sugar mixture. Mix well and press into a 9 x 13-inch baking dish. Bake at 300 degrees for 12 to 15 minutes. Let cool.

- Filling
- 1 can sweetened condensed milk
- 1 can crushed pineapple (drained)
- 2 cans mandarin oranges—drained (one can for pie—one can for top)
- 2 lemons, juiced (1/3 cup)
- 1 small can diced peaches (drained)
- 1 large Cool Whip

In large mixing bowl, pour condensed milk. Add lemon juice and fold in pineapple, peaches and one can mandarin oranges. Mix well. Fold in Cool Whip. Fold into baked pie crust. Sprinkle with 1/3 cup cereal/sugar mixture, and place remaining can of oranges on top. Freeze for 4 hours. Take from freezer about 20 minutes prior to serving.

Stuva named to succeed Youtzy at Jo-Carroll

Gary E. Stuva, a native of Adair County in Iowa, has been named manager of Jo-Carroll Electric Cooperative, according to Vernon Law of Savanna, president of the Elizabeth-based rural electric system. Stuva assumed his new duties on June 15. Previously he was manager of Greenfield, Iowa, Municipal Utilities. Stuva, 41, succeeds Charles C. (Chuck) Youtzy, who retired April 30 after 38 years with the cooperative, including 33 years as manager.

The new manager graduated from Fontanelle, Iowa, High School in 1958 and attended Southwestern Community College in Creston, Iowa. He became manager of the Greenfield electric and water utilities system in 1977. From 1967 until 1973 he worked for Farmers Electric Cooperative of Greenfield, first as a lineman and later in the member services department. The Greenfield electric utility service for the town of 2,300 includes 6,750 kilowatts of generating capacity.

Stuva and wife Carol have four children: David, 21, a student at



Gary E. Stuva

Northwest Missouri State University, Maryville; Cherie, 19, a student at Southwestern Community College, Creston, Iowa; Roger, 18, a high school senior, and Ronald, 15, a high school sophomore.

Youtzy began his career at Jo-Carroll as a lineman, when the cooperative served about 700 members. Today the cooperative serves more than 3,600 member-consumers in Jo Daviess and Carroll counties on northwest Illinois. He was quite active in community affairs in Elizabeth, serving as fire chief for a number of years, on the village board for 20 years and as mayor of Elizabeth for 12 years.

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Power chuting offers plenty of thrills without the risk usually associated with such activities. While the 'chutist is "flying" 150-200 feet above the ground or water, if the pulling vehicle stops, the chutist descends like a parachutist. In this photo, the Ferrills are 'chuting on Clinton Lake. A 40-acre field will do nicely, too, Ferrill says.

For Oreana farmer

Sideline business hits new highs

The daring young man on the flying trapeze, who flew through the air with the greatest of ease, did not have anything on today's power chutist, except that daring, in large quantity, is not really a necessary ingredient.

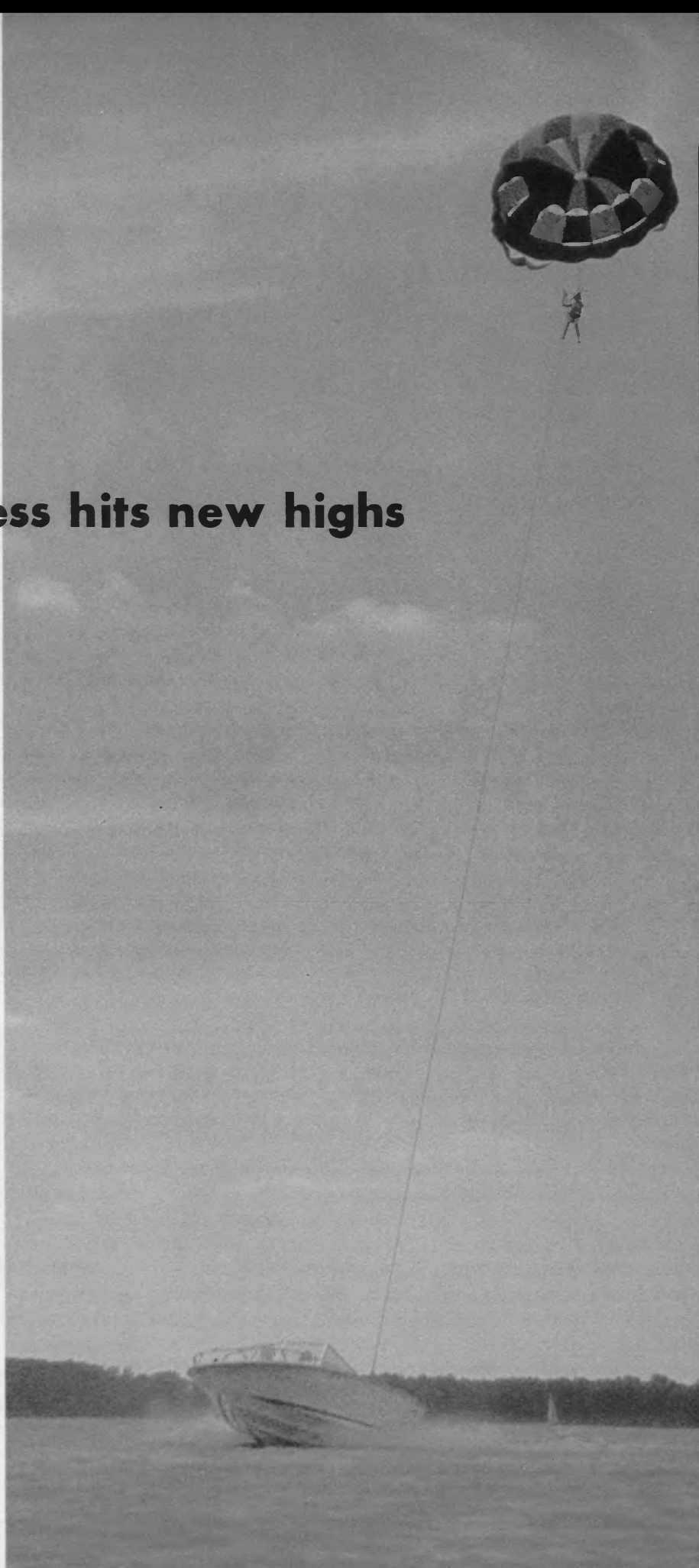
"Nearly anybody can do this," says Ross Ferrill, an Oreana farmer, ardent power chutist, and member of Corn Belt Electric Cooperative.

"We were flying out of a field last year," he says, "and we'd give a ride to anybody who wanted to go up. There was an 11-year-old girl who went, and a guy who was 67 years old went in the morning. He came back later, in the afternoon, and said, 'Can I do that again? That was a lot of fun.' Age is no deterrent, really."

"Physical condition is not a matter of great importance, either, or I wouldn't be doing it," laughs the 46-year-old Ferrill, "and you don't have to be particularly strong, either."

"There's a little harness the 'chutist straps on," he explains, "and we connect that to the power chute and to either a boat or car. We have two people hold the chute up so it fills, and the driver makes a gradual start. When the chutist feels the rope starting to pull, he starts running. He should be off the ground in ten yards or so.

"You can power chute in a fairly level field — you need about 40 acres — or on a lake or river," he realtes, "but I like the water best. My son-in-law, Gay Shoemaker, prefers



land. But I'm crazy about the water anyway," he adds with a chuckle.

So what is a Midwestern farmer doing 150 feet off the ground under a nylon canopy, being towed by a boat? "Having a lot of fun," Ferrill says. "I used to water ski," he continues, "but this is so much more fun that I hardly ever ski any more. It's safe, and that's what I like about it. There are some thrills, but I don't see who you can get hurt, unless your driver gets you too close to some trees, or something like that. If your boat stops, you come down like a parachutist."

The Ferrills discovered power chuting while vacationing in Acapulco, Mexico a couple of years ago, and decided both to get into it as a hobby, and to get into the business of selling power chutes.

"We were really enthusiastic," Ferrill says, "and we thought there'd be a lot of interest. There is a lot of interest," He adds ruefully, "but there aren't too many people buying. Still, word's getting around, and I think it'll be a growing thing before long." Meanwhile, we're having a lot of fun."

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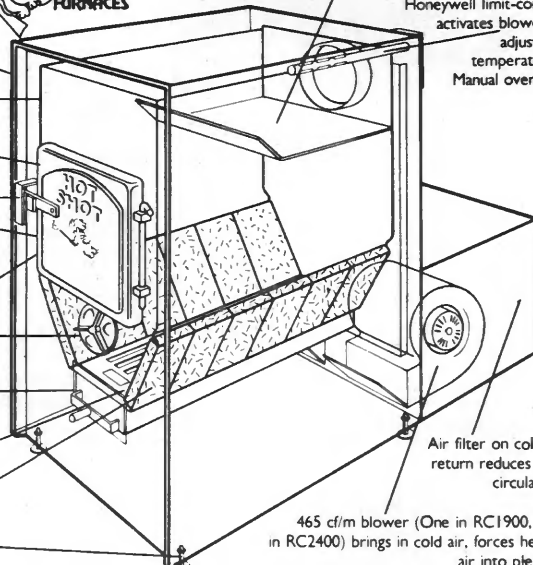
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Red Flowering Quince, 1-2 ft. ... 95 ea.
Persian Lilac, Purple, 1-2 ft. ... 95 ea.
Old Fashion Lilac, 1-2 ft. ... 1.25 ea.
Bndal Wreath Spirea, 1-2 ft. ... 1.25 ea.
Hydrangea P.G., 1-2 ft. ... 79 ea.
Mockorange, White, 1-2 ft. ... 79 ea.
Sweet Shrub, 1-2 ft. ... 79 ea.
Rose of Sharon, 1-2 ft. ... 79 ea.
Pussy Willow, 1-2 ft. ... 79 ea.
Russian Olive, 2-3 ft. ... 1.75 ea.
Red Barberry, 1-2 ft. ... 95 ea.
Jap. Snowball, 1-2 ft. ... 95 ea.
French Lilac, Red, 1-2 ft. ... 2.95 ea.

Butterfly Bush, Purple, 1-2 ft. 1.25 ea.
Azalea, White, Purple, Red or Pink 4-8 inches ... 99 ea.
Glossy Abelia, 1/2-1 ft. ... 95 ea.

FLOWERING TREES—1-2 Years Old
Magnolia Grandiflora, 1/2-1 ft. 1.45 ea.
Mimosa Pink, 4-5 ft. 1.95 ea.
American Red Bud, 4-5 ft. 1.95 ea.
Pink Flow. Dogwood, 3-5 ft. 8.95 ea.
Bradford Flowering Pear, 2 1/2-4 ft. 5.98 ea.
Smoke Tree, 1-2 ft. 1.95 ea.
Golden Chain Tree, 3-4 ft. 2.95 ea.
Golden Rain Tree, 3-4 ft. 2.95 ea.
Double Pink Flow. Cherry, 1/2-1 ft. 98 ea.
Double Pink Flow. Cherry, 3-5 ft. 5.95 ea.
Flow. Crab. Red, 3-5 ft. 2.98 ea.
Magnolia Soulangiana, 1-2 ft. 2.95 ea.
European Mt. Ash, 3-4 ft. 3.95 ea.
Red Flow. Dogwood, 2 ft. 4.95 ea.



BURNING BUSH
4 to 8 in. ... 99 ea. 10 for 9.50
20 ... 17.95 50 for 37.95
In fall the leaves turn a brilliant mirror-bright crimson. A 4-5 ft. showpiece with unusual corky bark. Hardy in sun or partial shade.

SHADE TREES—1-2 Years Old
Green Ash, 4-5 ft. ... 1.95 ea.
Golden Weeping Willow, 4-5 ft. 1.95 ea.
Silver Maple, 4-6 ft. ... 1.98 ea.
Green Weeping Willow, 4-5 ft. 1.98 ea.
Ginkgo Tree, 1-2 ft. ... 1.45 ea.
Pin Oak 3-5 ft. ... 2.95 ea.
Lombardy Poplar, 3-4 ft. ... 79 ea.
Sycamore, 4-5 ft. ... 1.95 ea.
Sweet Gum, 4-5 ft. ... 1.95 ea.
White Birch, 4-6 ft. ... 2.95 ea.
Crimson King Maple, 3-5 ft. 9.95 ea.
Persimmon, 1-2 ft. ... 95 ea.
Dawns Redwood, 1-2 ft. 2.95 ea.
Jap. Red Leaf Maple, 1 ft. 2.95 ea.

FRUIT TREES—1-2 Years Old
PEACHES, Varieties: Belle of Ga., Elberta J. H. Hale, Hale Haven, Oxie Red, Golden Jubilee, 1-2 ft. 1.45 ea.
2-3 ft. 2.45 ea.
3-5 ft. 3.45 ea.
APPLES, Varieties: Stayman, Winesap, Red Delicious, Early Harvest, Red Rome Beauty, Red Jonathan, Lodi, Grimes Golden, Yellow Trans., Yellow Del., Early McIntosh
2-3 ft. 2.75 ea.
3-5 ft. 3.95 ea.

CHERRIES, Varieties: Montmorency, Black Tartarian, 2 1/2-4 ft. 4.49 ea.
PEARS, Varieties: Kieffer, Orient, Bartlett, 2-3 ft. 3.45 ea. 3-5 ft. 4.95 ea.
APRICOTS, Varieties: Moorpark, Early Golden, 1-2 ft. 1.45 ea. 2-3 ft. 2.45 ea. 3-5 ft. 3.45 ea.
NECTARINE, 1-2 ft. 1.25 ea. 2-3 ft. 2.45 ea. 3-5 ft. 2.95 ea.
PLUMS, Varieties: Damson, Red, June, Methley, Burbank, 1-2 ft. 1.25 ea. 2-3 ft. 2.45 ea. 3-5 ft. 3.45 ea.

DWARF FRUIT TREES—2-3 Years Old
DWARF PEACHES, Varieties: Elberta, Red Haven, Belle of Ga., Golden Jubilee
2 1/2-4 ft. ... 4.45 ea.

DWARF APPLES, Varieties: Red Delicious, Yellow Delicious, Winesap, Early McIntosh, Jonathan, Lodi, Yellow Transparent.
2 1/2-4 ft. ... 4.45 ea.

DWARF CHERRIES, Varieties: Montmorency or North Star 2 1/2-4 ft. ... 5.95 ea.
DWARF PEAR, Varieties: Bartlett or Kieffer.
2 1/2-4 ft. ... 5.95 ea.
DWARF PLUM, Varieties: Burbank
2 1/2-4 ft. ... 4.45 ea.



VINES—1-2 Years Old
Grape Varieties: Concord, Niagara, Luttie, Fredonia, Delaware, Catawba.
1-2 ft. ... 1.25 ea.
Red Scarlet Honeysuckle, 1 ft. 95 ea.
Wisteria, Purple, 1/2-1 ft. 1.25 ea.
Bittersweet ... 75 ea.
*Clematis, White, 1/2-1 ft. 75 ea.
Yellow Jasmine, 1/2-1 ft. 1.25 ea.
*Vinca Minor Clumps ... 25 ea.
English Ivy, 4-8 inches ... 35 ea.
Euonymus Colorado, 1/2-1 ft. 29 ea.
Ajuga Bronze Ground Cov., 1 yr. 35 ea.

NUT TREES—1-2 Years Old
Hazel Nut, 2-3 ft. ... 3.45 ea.
Butternut, 3-4 ft. ... 3.95 ea.
Chinese Chestnut, 3-5 ft. 2.45 ea.
Hardy Pecan Seedlings, 1-2 ft. 1.50 ea.
Stuart Pecan, Papershell, 2-3 ft. 7.95 ea.
Black Walnut, 2-3 ft. ... 2.45 ea.
English Walnut, 2-3 ft. 7.95 ea.

EVERGREENS—1-2 Years Old
*American Holly, 1/2-1 ft. 65 ea.
*Rhododendron, 1/2-1 ft. 1.25 ea.
Pfitzer Juniper, 1/2-1 ft. 95 ea.
Boxwood, 1/2-1 ft. 79 ea.
Red Berry Pyracantha, 1 ft. 1.25 ea.
Yellow Berry Pyracantha, 1 ft. 1.25 ea.
Burdock Holly, 1/2-1 ft. 95 ea.
Dwarf Burdock Holly, 1/2-1 ft. 95 ea.
Wax Leaf Ligustrum, 1/2-1 ft. 45 ea.
Colorado Blue Spruce, 1/2-1 ft. 75 ea.
*Mountain Laurel, 1/2-1 ft. 75 ea.
*Canadian Hemlock, 1-2 ft. 75 ea.
Hetzli Holly, 1/2-1 ft. 79 ea.
Pine Fraseri—Red Tip 1/2-1 ft. ... 1.29 ea.

Andora Juniper, 1/2-1 ft. 95 ea.
Jap. Yew, 1/2-1 ft. 1.25 ea.
Baker Arborvitae, 1/2-1 ft. 95 ea.
Globe Arborvitae, 1/2-1 ft. 95 ea.
Camellia, White, 1/2-1 ft. 95 ea.
Camellia, Red, 4-8 inches. 95 ea.
Norway Spruce, 1/2-1 ft. 75 ea.
Euonymus Manhattan, 1/2-1 ft. 39 ea.
*White Pine, 1 ft. 75 ea.
Mugho Pine, 4-6 inches ... 95 ea.
Scotch Pine, 1/2-1 ft. 75 ea.
Blue Rug Ground Cover 4-6 inches ... 1.25 ea.
Foster Holly, 1/2-1 ft. ... 1.25 ea.

BERRY PLANTS, ETC.—1-2 Years Old

Blackberry, 1 ft. 69 ea.
Black Raspberry, 1 ft. 99 ea.

Blueberries, Rancocas, Rubel, Berkley and Blueray, 2 yr. 1 ft. 2.95 ea.
Red Everbearing Raspberry, 1 ft. 99 ea.
Dewberry, 1 ft. 99 ea.
Boysenberry, 1 ft. 99 ea.
Gooseberry, 2 yr. 1 ft. 1.50 ea.
Figs, 1-2 ft. 1.95 ea.

BULBS AND PERENNIALS—1-2 Years Old
4 Pampas Grass, White Plumes 2.50
10 Hibiscus, Mallow Marvel 2.50
10 Hollyhocks, Mixed Colors 2.95
6 Canalis, Red, Pink, Yellow 2.95
10 Iris, Blue or Purple 2.50
*10 Day Lilies, Roots, Orange Flow 2.50
10 Crown Vetch 2.95
10 Candytuft, White 2.95
10 Babybreath, White 2.95
10 Shasta Daisy, Alaska 2.95
10 Lupines, Mixed Colors 2.95
10 Sedum, Dragon Blood 2.95
10 Fall Asters, Mixed Colors 2.95
*10 Yucca, Candel of Heaven 2.95
10 Mums, Mixed Colors 2.95
4 Dahlias, Mixed Colors 2.95

BERRIES, FRUITS AND HEDGE—1-2 Years Old
10 Rhubarb, 1 yr. Roots 1.95
20 Asparagus, 1 yr Roots 2.25
25 Strawberry, Blakemore or Tenn Beauty 2.95
25 Gem. Everbearing Strawberry 2.95
25 South Privet, 1-2 ft. 6.95
25 North Privet, 1-2 ft. 6.95
10 Multiflora Rose, 1-2 ft. 6.98

NATIVE WILD FLOWERS—1-2 Years Old
Collected from the mountains
*6 Lady's Slipper, Pink 2.50
*8 Dutchman Breeches, White 2.50
*6 Jack in Pulpit, Purple 2.50
*10 Trilliums, Mixed Colors 2.50
*10 Blue Bells 2.50
*10 Maiden Hair Fern 2.50
*10 Christmas Fern 2.50
*10 Cardinal Flowers, Red 2.50
6 Dog Tooth Violets 2.95

DELIVERY DATE

Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, N. Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.

SPRING: Jan. 15-April 30
FALL: October 1-December 10

ALL OTHER STATES

SPRING: March 1-May 15
FALL: Sept. 25-Nov. 15

These are suggested dates by leading Nursery Associations. If these delivery dates are not acceptable to you please so instruct on the order form—Thank you very much for your cooperation. It is hard for us to give the exact date of delivery due to weather conditions in each state, however, every effort will be made to ship within the specified periods above.

Our plants are nursery grown from cuttings, seeds or budded stock unless otherwise stated. These have never been transplanted. Those marked with (*) Asterisks means these are collected from the wild state. Plants are inspected by the Tennessee Department of Agriculture. This gives you a chance to buy at lower prices. You may order as many or as few plants as you wish. Send \$2.00 extra with order for postage and packing. RUSH YOUR ORDER TODAY. TWO-WAY GUARANTEE: We ship live plants packed well to reach you in perfect condition. However, sometimes a package gets lost and stays in transit a long time. In this case, in the Fall and Winter when plants are dormant you can scrape on the bark and tell whether the plants are alive or not. If the bark is green it is alive. We believe we have the best guarantee any mail order nursery could possibly offer. Here is our two-way guarantee. First guarantee—When you receive your order, if there are any plants in bad condition, you notify us immediately and we will replace absolutely FREE. Second guarantee—The reason we make this strong guarantee is because there is no reason any of the plants should die. However, if any fail to live within 12 months from the date of delivery, we will replace for one-half of the original purchase price, plus \$1.00 for postage and handling. No return of dead plants necessary. We guarantee our plants to be true to name and color. Anything that proves to be wrong color or variety, we will replace free.

SAVAGE FARM NURSERY

P.O. BOX 125 IL • McMinnville, Tennessee 37110

NOTICE

If in doubt about any of the plants listed in this price list, growing in your area, please check with your County agent for advice.