

Armenia

Burning manure and plastic for heat

By Ken Goyer



This is in the village of Ashotsh, Armenia, about 20 kilometers from the Georgian border. In case you would like to “go” there on earth.google.com it’s located at 41° 01’ 20 N latitude, 043° 53’ 00 E longitude.



Manure is the main source of heating in the wintertime, when it is not uncommon for the temperature to get down to minus 20o C.



Manure has been spread out to congeal and then cut and stacked to dry.



Manure being stored in the attic also serves as insulation.



More manure being dried. I'm not sure where it will all be stored. I would think (just guessing) that one would need five or ten tons of it to get through the winter.



The landscape here is very bleak. No trees. I'm not sure why. Probably they have been cut down over the last couple of thousand or so years and not replanted. The elevation here is 2050 meters.



I am visiting with Rotarian Aram of the Gyumri Rotary Club. He has started a dairy farm and cheese factory here in Ashotsh. He has 120 cows. On our way to his farm we met his milk maids returning from their morning milking. They milk 80 cows twice a day by hand. The significant detail about this photo is the bag of (plastic) trash one of them is taking to her house to store for burning when it gets cold.



We are now back in Gyumri. These houses are pretty average. Conventional wisdom says that everyone in Armenia has electricity, and almost everyone, certainly everyone living in a city, has gas for heating. But Gyumri is still recovering from a devastating earthquake in 1988 which left 20,000 dead and thousands homeless. The collapse of the Soviet Union in 1992, and subsequent wars and blockades with neighboring countries have left many people unemployed and desperate and sometimes burning their parquet flooring to keep from freezing to death.



But many people live in houses like this. Some are left over “container” houses called domics, or “little houses”, brought in by the Soviets after the earthquake. Others are just shanties.



This is Albert and Marat and their children.





We have come with a social worker from Caritas to visit this widowed “80” year old woman. She has no income and no resources. Caritas helps about 100 women like her but they estimate that there are about 5,000 elderly single women and many others in Gyumri who do not receive anything.



This is her stove.



Looking inside, we see contents of her stove, cardboard and plastic.



This is her heating supply for the winter.



A closer look. Cardboard and plastic she has scrounged from the trash, old shoes burn good, used oil filters. Someone higher up probably gets the waste oil to burn.



In the market, many stoves and stove accessories are now being sold in anticipation of winter. These sheet metal stoves cost about \$15 and you need about \$15 more for the chimney.



This stove also costs about \$15. It has been made from recycled scrap metal. The heavy metal top has a ring to remove so you can heat a pot directly.



Looking inside the stove you can see that there is no thought to the combustion or heat transfer other than the grate.



More stoves for sale.



Any available piece of fuel is cut up and saved.



Back at the farm. Manure burns surprisingly good. I expected it to smolder without a very good flame.



The first Rocket stove experiment. The problems- It needs to hold a bigger quantity of fuel because the manure is light weight in relation to wood. The grate plugs up with ashes rapidly. Let's try a down feed hopper with a semi self feeding stair step grate and ash drawer, And put a door on it to prevent back drafting into the room.



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Thanks for looking,
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