

# The Grocer's Encyclopedia, 1911

## Refrigerated Rail Car Inquiry Unit

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Artemas Ward, formerly editor of *The National Grocer* magazine, compiled and published [\*The Grocer's Encyclopedia\*](#), (1911) which included tips on storage and preparation of various types of food in addition to advice on ancillary items such as chewing gum and kitchen tools. Many of the entries focused on methods of using ice, along with more traditional "dry" methods, and the ideal minimum and maximum temperatures for storing fruits, vegetables, meat and fish. This excerpt provides a history of ice harvesting and manufacturing.

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**HUNGARIAN and AUSTRIAN WINES.** Hungarian wines hold high reputation for their tonic qualities, as they contain an unusually large proportion of iron. The most famous of all is TOKAY (which see). *Szamorodni* is a noteworthy soft, full, white wine made from the same grapes as Tokay, but without the selection, or addition, of vine-ripened berries. Among other good varieties are *Ruszt* or *Ruster*, also of Tokay type; the red and white types of *Ménester*, *Villányi* and *Ofen*, or *Ofner*, *Adelsberger*; the red *Budai*, *Egri* and *Szegyarden*; the white *Magyarszer*, *Neszmélyer*, *Budacsonger*, *Pesti* and *Somlauer*; *Karlouitzer*, of Port style; several *Muscats*; Hungarian *Vernouth* and a number of *Croatian* wines.

Austrian wines resemble Hungarian in general character. The best known are *Muscats*; *Gumpoldskirchen*, of Sauternes style; *Luttenberger*, rich and syrupy; *Foedauer*, red and white, and several varieties from Dalmatia—among them the sweet *Maraschino* (made from the grape of that name and having no connection with Maraschino, the liqueur), and aromatic *Muscats*.


**HUNYADI JANOS.** See article on table and medicinal MINERAL WATERS.

**HYSSOP:** a small bushy herb with leaves of aromatic and stimulant properties which grows wild in the south of Europe. The tops and flowers are used in making "Hyssop Tea."

**ICE AND REFRIGERATION.** Various methods of freezing water have been in use to a small extent for some hundreds of years, but the modern industry of ice manufacture and refrigeration, now of considerable magnitude and great importance, dates from about the year 1870. At that time there were four plants in operation in the United States as against nearly 2000 now engaged in the production of ice for general sale, in addition to the very large number of ice and refrigerating plants used in the meat, cold storage, brewery and other lines. Artificial ice was formerly soft and consequently of poor keeping qualities, but the present standard product is both hard and lasting. The great reduction in the cost of manufacture is attributable to the high efficiency of improved machinery.

The principal methods of modern use are the Compressor, Absorption, Vacuum and Cold Air. Nearly all American plants are operated either by the compressor or absorption system, the former being the more popular, and anhydrous ammonia is the gas most generally employed.

In the *Compressor* system, the gas is condensed by pressure and then reduced to a liquid by chilling in cooled "coils" or pipes. This liquid is released into another coil, known as the "expansion pipe," where it again becomes gas and in so doing absorbs heat from its surroundings—converting water into ice, or reducing the atmosphere in



Marking ice for cutting

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cooling rooms, refrigerator cars, etc. The expanded gas goes back to the compressor to be used over and over again in the same way.

By the *Absorption* method, liquid ammonia is employed as the fundamental agent, the gas being released by heating to about 200° to 210° Fahr. The course of the gas produced is similar to that in the Compressor method, being chilled into a gaseous liquid in a condensing coil and going then to the Expansion Pipes, where its action is identical. It is later sucked back into the mother-water tank and the process repeated. In commercial operation, the process is practically continuous.

The action of the Expansion Pipes may be either Direct or Indirect. By the former, they come in close or complete contact with the water or atmosphere to be frozen or chilled. By the latter, their direct action is on strong brine or on air-coils, which are employed as the immediate agents. The brine may be made with common salt, but preferably with calcium chloride.

The principal forms of manufactured ice are Can, Plate and Block.

*Can Ice* is obtained by setting cans




Sawing ice

of water, previously distilled and filtered to remove both impurities and air bubbles, in brine freezing tanks. It is generally good in quality but has a tendency to be soft in the center.

*Plate Ice* is made in oblong tanks in which the water is agitated by air-jets to remove the air particles and assist the freezing action to drive the impurities to the center, which remains uncongealed and is later run off. The sides of the tanks consist of iron plates in contact with Expansion Coils. The ice forms on these plates—hence its name. As removed from the tanks, it is obtained in blocks, generally about sixteen feet long, eight feet wide and one foot thick, weighing three tons and upwards.

*Block Ice* is made in the same way as Plate Ice, except that it is formed in cells or plate-tanks which are frozen solid, or direct on the Expansion Pipes.

**Impure and Poor Ice.** It is incumbent upon municipalities and individuals to protect themselves against the sale of ice, whether natural or artificial, produced from contaminated water, as under certain conditions it may prove most unwholesome. The increase in population and the growth of manufacturing industries has so extended the pollution of lakes, rivers, etc., that in the larger towns and cities the



"Floating in" the cut ice

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