WATER, ICE, AND GLASS

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Since the last report of the Museum’s excavations in ninth- and tenth-century Nishapur announcing the discovery of a large number of glass drinking vessels and of evidence that glass was made there, an English writer, who was unacquainted with this find, has published an article on Near Eastern glass. In order to indicate that fine crystal glass was known as far east as Khurasan in the tenth century he had to refer to the work of Daqiqi, a contemporary poet of Tus, a city about sixty miles away from Nishapur. Daqiqi would hardly have welcomed the suggestion that one of his verses should be mentioned for archaeological purposes rather than for its beauty, but this indignity is nothing to the treatment he received from Firdausi, another famous man of his own city and author of the Shahnameh, the great Persian epic poem. Daqiqi had originally been commissioned to write this “Book of Kings,” but, when he had completed a thousand couplets, he had the misfortune to be stabbed to death by a slave. Firdausi criticized these lines but did not hesitate to incorporate them in his own work. We, however, will content ourselves with repeating the minor injury and quote Daqiqi’s verse:

Water and ice, behold, within a glass
How candle-bright all three do shine; but see,
The twain will fuse, yet one a frozen mass
Remains. One hue, one luster have these three.

The elements here compared—water, ice, and glass—are now so plentiful in our civilization that little more attention is given them than to the air we breathe. Nevertheless, some study of them will enable us to get a glimpse of life as it was in Nishapur a thousand years ago.

We have to consider a country that, except in the region of the Caspian Sea, suffers from a scanty rainfall, but the Persians, always an ingenious people, have shown great skill in handling the problems entailed by this condition. The system they adopted in Nishapur gives an excellent idea of the methods still employed in many other parts of the country. From mountains a few miles away, small lively streams, fed in summer with melting snow, descend to the plains below. Some of the water is distributed by means of narrow ditches, often bordered by trees, for the irrigation of
Nishapur. Modern kiln for the manufacture of pottery hoops to line underground water channels.

Watercourse passing through the IX and X century site of Sabz Pushan. The hoops are shown in place.

Greenish glass demijohn for wine from the excavations at Nishapur. X century 1/5 actual size.
Shiraz. Series of “craters” indicating underground water channels are to be seen running diagonally across the plain.
the fields between the mountains and the city, but for the more distant fields and for the drinking supply of the city and its outlying villages, water, tapped from the foothills, flows through channels that have been tunneled out beneath the surface of the land. The course of the channels is marked by a series of humps of earth, like a chain of giant molehills, formed during the construction of these underground conduits. A circular shaft is sunk vertically to the desired depth and the transverse canal with a slight slope is laboriously made. The earth and mud that is excavated is brought to the surface by a leather bucket that is raised and lowered by means of a wooden windlass erected at the mouth of the shaft.

1 In fairness to the Nishapurians we must add that a traveler from Hamadan spoke of them as “men of policy and good judgment.” Muqaddasi later in the tenth century used both praise and censure. He was impressed by “their learning, their luxury, and by their skill as artisans” though he found them “somewhat conceited and cold.”

This dirt is cast around the entrance hole in such a fashion that it forms a high circular crater. When the work is finished, a cover is put over the hole in the center to keep earth from falling in and to allow entrance for cleaning operations when necessary.

In ancient times the conduits beneath the city were vaulted with square yellow bricks or, as is the case today, were lined with oval earthenware hoops consisting of flat pottery rings. They look remarkably like oversized horse collars and are still manufactured in kilns situated on the outskirts of the town (ill. p. 176). Smaller conduits were made by using tapered pottery pipes that fitted into each other. The great advantage of this underground conduction of water is that it prevents evaporation and ensures cool and refreshing water for drinking.

Arab geographers were much impressed by this method of supplying water to the city, and one, probably an unwelcome guest, said that the city would indeed be delightful were the people beneath the ground and the water on the surface. They were so impressed by the fact that the water was a long way down that they exaggerated the distance and spoke of it as being a hundred feet below the ground, saying that it was necessary to go down no
fewer than seventy steps to reach it. In no part of our excavations, however, have we found more than thirty steps. These visitors seem to have overlooked the fact that ordinary wells were also dug—often at a somewhat unsanitary distance from pits that served other purposes. Various travelers praised both the coolness and the purity of the water, and this second quality was judged not just by noting the flavor but by observing the effects of drinking it. Muqaddasi suggested that if you wanted to know the quality of the water in a town “you should go to the dealers in cambric and spices [apparently the thirstiest men of their day] and examine their countenances. If you should see cadaverous faces and hanging heads, leave the place as quickly as you can.”

Drinking water was brought to the house, just as it is today, in porous earthenware pitchers, and in these it was kept until needed for use. Such water, even in summertime, is always pleasantly cool. In those days it appears to have been mostly drunk, not from glass tumblers as the verse above might suggest, but from finely turned pottery cups or, much more commonly, from small wide-mouthed jugs. These were often decorated and, very occasionally, inscribed with such uninteresting remarks as “Blessings on the owner.” It may strike one as strange that a man should drink his own health whenever he quenched his thirst, but many an occidental who would do no such thing thinks nothing of muttering a “God bless my soul” to himself at even less appropriate moments. In spite of Kipling, East and West meet more often and more closely than his famous ballad suggests.

Persians did not rely entirely on their underground water system and the use of porous jars for keeping their water cold. We know that at the mosque of one town in Khurasan two great brass pitchers had ice put into them every Friday for the benefit of worshipers. To procure ice in this northeastern province, where the winters are cold, was not difficult, but in some parts of the country a considerable amount of ingenuity must have been used. In other and more distant lands of the Islamic world of the tenth century ice was a
Saadatabad. Decorated ice wall with two domed storage pits for ice. Another ice wall, at Kerman, is shown at the head of this article.

Shiraz. View of ice pans with water ready for freezing. The great protecting wall is behind the spectator.
luxury indeed. In Egypt, for example, it was brought all the way from Syria to meet the demands of the court: a traffic nearly as remarkable as that between New England and India when the fast tea clippers of the early nineteenth century found ice a most profitable cargo on the journey east.

In Nishapur itself ice and packed snow are to be found for a surprisingly long time in the sheltered crevices of the near-by mountains, whence it is carried down into the city by donkeys for use in the summertime. In the hotter parts of the country artificial means have to be employed for both the production and the preservation of ice. This is done by an ingenious but remarkably simple method. A great wall facing north and south, and often decorated with bold patterns (see opp. page), is built of puddled clay and on the north side of this, protected from the weak low rays of the winter sun, water is run into shallow pans made in the surface of the ground. As soon as this water freezes it is raked into deep pits with some straw to insulate it, and, for added protection, a dome is usually built to cast a shadow over the opening of each pit. Here the ice is stored, and in the summer it is taken out as required and sold at a reasonable price.

We do not know for certain whether ice was made and stored in this particular way in the tenth century, though this is more than probable, for we do hear something of the uses to which it was put in the summertime. In ancient times Persian kings are said to have taken their siestas in rooms with hollow walls filled with ice. Later, in the tenth century, we do not hear of this; Adud ad Dauleh, the powerful ruler of Shiraz, who, incidentally, found that ice was a good commodity to tax, relied on felt curtains constantly wetted with water to cool the air. We also know that melons were transported for long distances packed in ice, but its
chief use must have been, just as it is today, for cooling drinks despite the fact that it was not always as crystal-clear as our ultra-hygienic fashion now demands.

Some explanation as to the nature of beverages will show that glass tumblers and beakers rather than porous pottery vessels would have been used whenever possible. Apart from dūgh, which tastes rather like a sour buttermilk, we will mention three that are consumed when freshened with ice, especially in the summertime: pālūdeh, sikanjabin, and sherbets. Pālūdeh (the word means “strained”) is a thickish drink made from water, flour, and honey with various flavorings. Sikanjabin (vinegar-honey, or oxymel), though now better known in Persia than anywhere else, has been drunk for many centuries in the Near East. Galen mentions it in the second century, but it had been used long before his day. In the West its history is more limited, the first literary reference to it in England being at the end of the fourteenth century and its use having now died out there altogether, even medicinally. It is made from a syrup composed of honey, vinegar, and herbs, but in Persia today sugar is substituted for the honey. When diluted with water and chilled with ice it is an excellent summer drink. A sherbet (this word has been taken over bodily from the Arabic and signifies something that is drunk) is made in a very similar fashion from a syrup generally compounded of sugar and fruit. In Nishapur, however, the chances are nine out of ten that a thousand years ago any sherbet drunk there would have been concocted from rhubarb, a speciality of the city to this day. This plant grows in the neighborhood in great profusion, often to a great size, and every year in May there is a great stewing and boiling of it for the manufacture of this syrup. There are old myths about rhubarb just as there are of the water supply, and we can dismiss as a gross exaggeration a sixteenth-century writer’s statement that a specimen sent to an Abbasid caliph weighed about a hundred

2 The word “julep” which reaches us by the way of an Arabic form of the Persian gulāb was not originally a syrup associated with medicine as in England, nor with whisky and mint as in America. It merely means “rose water.”
pounds; nor will we do more than mention, for those interested in the origin of man, that an old Iranian legend has it that the first man and woman on this earth sprang from a single-stemmed rhubarb.

It has already been indicated that crystal-clear glasses were used for other purposes than to contain water and ice, the combination that proved so attractive to Daqiqi's eye, but colored sherbets and syrups were not all that broke the unity of hue of which the poet spoke. These beakers and tumblers, some of them incredibly thin and often elegantly cut on the wheel, also gleamed with the ruddy or the golden light of wine. Daqiqi himself reveals this in another of his verses:

Of all that's good or evil in the world
Four things suffice to meet Daqiqi's need:
The ruby-colored lip, the harp's lament,
The blood-red wine, and Zoroaster's creed.

There is some reason to doubt his fourth need, for his full name is purely Muslim, but there is no reason to doubt the first three. Wine-drinking was indulged in by the Zoroastrians, and despite wholesale conversions to Islam for three hundred years, it was still practiced in the tenth century, not only in Persia itself but in other parts of the Islamic world. At this time Nishapur was a great and famous city; Muslims, Christians, Zoroastrians, and Jews thronged its streets. All sorts and conditions of men were there and among them both puritans and winebibbers. The drinking of wine was not done on the sly, even by those Muslims who indulged in it, though there was much argument as to its propriety. As a compromise, perhaps, wine was usually prepared and sold by those of other creeds, a custom that, to no small extent, still holds good.

Some habits in connection with drinking were similar to our own, but others are quite different from our occidental customs. Solitary drinking was considered barbaric, and Persians, knowing that wine "removes the finger of restraint from the lips of expression," chose rather to drink in pleasant company, preferably composed of only a few, and to engage in lively conversation. Music and dancing were also in evidence on these occasions. Mealtimes were not considered appropriate for wine-drinking even in the most dissolute times any more than they were for the exercise of the art of true conversation, an art which the Persians held and still hold in high esteem. The ideal time for this was before the actual repast. The close of a meal when the appetite is sated and the brain dulled was considered still less suitable; that was the time for the guests to depart, surely a saner custom than the serving of a pousse-café so popular in the Western world during the last century. We see, then, that even in this little matter of drinking, as it was practiced a whole millennium ago, there was much practical ingenuity and civilized living in a city which most English and Americans know only as the home of Omar Khayyam, an illustrious citizen, who did not turn down his empty glass until another century had passed.

A few details of tenth-century life have been taken from a somewhat confused miscellany called The Renaissance of Islam. It was culled from many sources by Adam Mez of Heidelberg and has been translated into English by Buxhsh and Margoliouth (London, 1937). The first verse of Daqiqi is translated from the Persian text of the Lubābu 'l Albāb of Muḥammad ʿAwfī published by E. G. Browne. The second verse is Professor Browne's translation.