


NUTRITION

WERE ANCIENT ZOROASTRIANS & ARYANS VEGETARIAN?

K. E. Eduljee



First Aryan jashn, feast, in legend, King Hushang & the Feast of Sadeh celebrating the discovery of fire.

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VEGETARIAN?

(ABRIDGED)

K. E. Eduljee

Zoroastrian Heritage Monographs

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*This monograph is dedicated to the memory of my mother Katayun Eduljee
née Katayun Kaikhoshro Irani.*
*Her brother, Darius Kaikhoshro Irani's exemplary life-style choices inspired its
writing.*

The monograph has been published in two versions:
1. Complete version with notations and source texts,
2. Abridged version without notations and source texts.

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Zoroastrian Heritage Monographs

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TIPS USING ADOBE READER

Using Read Mode

Task	Using the Drop Down Menu & Mouse	Using Keys (PC) Press
Start Read Mode	View > Read Mode	Ctrl and H
Change pages	Mouse over center-bottom of screen to reveal control bar	PgDn PgUp
Change and zoom pages	Mouse over center-bottom of screen to reveal control bar	Enlarge: Ctrl and + Shrink: Ctrl and -
Go to first page		Ctrl and Home
Go to last page		Ctrl and End
Exit Read Mode	View > Read Mode	Esc

Using Full Screen Mode

Task	Using the Drop Down Menu & Mouse	Using Keys (PC) Press
Start Full Screen Reading	View > Full Screen Mode	Ctrl and L
Next page	Left click mouse or advance scroll wheel	PgDn
Previous page	Right click mouse or retreat scroll wheel	PgUp
Enlarge page	Ctrl and advance scroll wheel	Ctrl and +
Shrink page	Ctrl and retreat scroll wheel	Ctrl and -
Exit Read Mode	View > Read Mode	Esc

ABOUT THIS MONOGRAPH

This monograph is part of a set of works by this author on nutrition, health and healing as described in ancient and medieval Zoroastrian texts. It is based on his blog posted in 2011. Links to his other nutrition, health and healing pages are provided in Part II of this monograph.



GLOSSARY

- Achaemenian - See Achaemenid.
- Achaemenid - The dynasty of Persian kings who became the king-of-kings, the overlords, of Aryana and then established the largest empire the world had known until then, the Persian Empire. The Achaemenids ruled Persia from sometime in the 7th century BCE to the 4th century BCE when they were defeated and overthrown by Alexander. The dynasty is named after its founder Achaemenes – a Greek-based westernized version of his actual name Hakhmanishiya. The dynasty is more authentically called Hakhmanish.
- Ahriman - The devil incarnate (for the purposes of these texts). Otherwise, the devil or an evil person.
- Ahura Mazda - God in the language of the Zoroastrian scriptures, the *Avesta*. The two words are used together or individually. Over the centuries, the name evolved to Ahurmazd, Hormozd and eventually Ormozd. Also see Khoda.
- Aryana - Ancient Iran. Also spelt Airyana or Ariana.
- Aryan - Person/people from Aryana. Person claiming Aryan descent. Also spelt Arian.
- atash - Fire.
- Avesta* - Zoroastrian scriptures. At one time, the *Avesta* consisted of 21 nasks or books dealing with philosophy, theology, rituals, prayers, hygiene, medicine and the medicinal properties of a thousand plants and herbs, history, astronomy, geography and other forms of knowledge. Today only five books and some fragments survive.
- Avestan - Language of the *Avesta*, the Zoroastrian scriptures. The language consists of dialects, the oldest being the language of the Gathas, the hymns of Zarathushtra. Also the script used in the *Avesta*.

- Bundahishn* - A Middle Persian (Pahlavi) Zoroastrian text based on older works that discusses creation, geography, history, astrology and mythology. It is also called the Zand-Akash meaning knowledge of the Zand (see below). The surviving *Bundahishn* texts are frequently referred as the *Greater Bundahishn* (based on the older 16th century compilation) and the *Lesser Bundahishn* (based on a later 18th century compilation).
- Denkard/Dinkart/Dinkard* - A 9th century CE text written by Zoroastrian priests after the Arab invasion of Aryana. The name means 'Acts of Religion'.
- div/deev/dev - Evil incarnations, individuals and demons. Devils.
- Farsi - The Arabic version of Parsi (see below).
- Ferdowsi - 10th-11th century Persian poet who wrote a shah-nameh (chronicle of kings, the popular history of Aryana) today called the *Shahnameh*.
- gav - Bovine, beast of burden. Also life (cf. jiv/jun in modern Hindi/Persian).
- gaya - Life. Related to jaya/gav/jivya, modern jiv meaning life.
- Gaya Maretan - Mortal life (gaya = life, mare-tan = mortal/body which can die).
- geush - Kine/bovine, earthly life, creation.
- Geush Urvan - Soul of the kine/bovine, earthly life, creation.
- gospand* - (Called gosfand in Farsi). Beneficent animals. This author proposes that Middle Persian '*gospand*' is derived from the Avestan 'gao-spenta' – 'gao' meaning 'cow', and 'spenta' meaning 'beneficent' in this context. While in New Persian 'gosfand' means 'sheep', in the Middle Persian context of our references, '*gospand*' appears to mean all useful/beneficent animals that could be domesticated as livestock – those that provided food as milk and cheese, fiber, transportation, labour as beasts of burden and for tilling, threshing and other such tasks. The category may have included fowl as well.

[*The New Persian replacement of ‘p’ with an ‘f’ in ‘*gospand*’ is likely part of the Arabization of the Persian language as in the transformation of ‘Parsi’ to ‘Farsi’.]

- Greater Bundahishn* - See *Bundahishn*.
- haoma - Avestan word for the chief of the medicinal plants in Zoroastrian-Aryan healing practice. The ephedra and ephedra-like family of plants (Also see hom).
- Hapta-Hindu - The land of the seven Indus rivers in the *Avesta*, i.e. today’s Northern Pakistan and Punjab (from Panj-ab, meaning the five rivers – the five eastern Indus tributaries).
- Haurvatat - An Amesha Spenta and Avestan word (later Khordad) meaning wholeness, holist and healthy living, excellence.
- Hind/Hindu - Ancient India in Zoroastrian-Aryan texts. More precisely, the Indus River and the lands surrounding the Indus River, namely present-day Pakistan and Punjab. The name ‘India’ is derived from Hind i.e. Ind. Ironically, today’s Pakistan has better claim to the modern name India than does India. The Vedic equivalents of Hind and Hindu are Sindh and Sindhu respectively.
- hom - Modern word derived from haoma and currently used to mean the ephedra and ephedra-like family of plants.
- Hormozd - Evolved version of Ahura Mazda (see Ahura Mazda).
- Iran - Modern nation and name derived from Airan and Airyana (Aryana).
- Khoda, Khodai - Common Aryan word for God (see Ahura Mazda) derived from an attribute of God, Khvada/khvadai (cf. khvadata, self-governed, sovereign or lord). The word has been used in the past to also mean a temporal lord. Sasanian King Shapur I’s (who reigned from 241 to 272 CE) inscription at Naqsh-e Rostam states in Parthian, “*Aryan-khshatra khvatwy khvyem*,” in

- reconstructed Sasanian, "*Iran-shahr khvadai ahem*" and in Greek, "*tou Aryanon-ethnous despotes eimi*" meaning "I am lord of the nation of the Aryans."
- Khwaday-nameh* - See *Khodai-nameh* below.
- Khodai-nameh* - New Persian version of the Middle Persian name *Khwaday-nameh*. *Khoda* (New Persian) or *Khwada* (Middle Persian) means lord either divine or temporal. Some authors feel the name *Khwaday-nameh* is synonymous with *Shah-nameh*, both meaning book of lords or kings.
- Lesser Bundahishn* - See *Bundahishn*.
- Magus/Magi - Magi, and its singular Magus, are Greek-based Western terms for Aryan-Zoroastrian priests, the *maga*, more recently known as the *mobeds*.
- Mazda - Zoroastrian word for God. See *Ahura Mazda* and *Khoda*.
- Media - First Aryan nation to enter Western history. Its native name was *Mada*. Its kings were overlords of *Aryana* from around the eight(?) to the 6th century BCE when they were displaced by the Persians led by *Cyrus the Great*.
- Middle Persian - The Persian-Aryan language as it emerged after the end of Macedonian rule in the 2nd century BCE, first as *Parthian* and then from the third to the seventh centuries CE, as *Sasanian*. There are therefore three versions of Middle Persian: *Parthian*, early *Sasanian* and late *Sasanian*. While some authors make distinctions between the three versions, others use this terms *Middle Persian* and *Pahlavi* to include all three. Evolving Eastern Aryan dialects such as *Sogdian*, *Khwarezmian* and *Saka/Khotanese* were also current during this time. Arabic writers used the names *Farisiya* (*Farsi/Arabic* for *Persian*) and *Fahlawiya* (*Pahlavi*) to mean all the Middle Persian dialects. Since Middle Persian was commonly written using the *Parthian* or *Pahlavi* script, it is also called *Pahlavi* (see below).

- Mithra - Friend, friendship, bond, loyalty. Also in Zoroastrianism, the guardian angel of these qualities and related virtues, and a pre-Zoroastrian Aryan deity or god Mitra as found in the Hindu scriptures, the *Rig Veda*. Also a woman's name in Iran.
- Mobed - Zoroastrian hereditary priest called maga in the more ancient language of the *Avesta*. They were called magoi by the Greek. Magus (singular) and Magi (plural) are Latin derivatives.
- nameh - Persian word meaning account, chronicles, letters, book. Derived from the Middle Persian (also called Pahlavi) word namak or namag. Also spelt nama.
- New Persian - Modern Persian language as revived by the poet Ferdowsi, properly called Parsi though currently called Farsi, the Arabic version of the name. Also see Persian.
- Old Persian - Language of the Achaemenid Persia era (700-300 BCE). A member of the Indo-Iranian language family.
- Ormozd - Evolved version of Ahura Mazda (see Ahura Mazda).
- Pahlavi - From Pahlav earlier known as Parthav (see below), one of the Aryan nations (as was Persia/Pars/Parsa). The name is also loosely used to mean the Middle Persian languages written in the Pahlavi/Parthian script – languages which range from the older language of Parthian times (Arsacid Pahlavi) to the language of Sasanian times (Sasanian Pahlavi also called Parsik). Some authors advocate that the term 'Pahlavi' should only be used for the script and not the language. In Iran, the Pahlavi script was displaced by the Arabic script after the Arab invasion in the 7th century CE, while the spoken Middle Persian language evolved into New Persian.
- Pars - An Aryan kingdom in the southwest of Greater Aryana, today called the province of Fars in Iran. Fars is the Arabic version of Pars.

- Parsi - Persian. Belonging to, of, or from Pars. The Zoroastrians who fled from Arab rule to India in the 8th and 9th centuries CE called themselves Parsees (Parsis). Farsi is the Arabic version of Parsi and is commonly used as the name of the modern Persian-Aryan language, New Persian, otherwise the language of Iran. Parsi is the more authentic name (than Farsi) of the Persian language.
- Parthia - The Aryan kingdom whose native name is Parthav and which lay in and around the mountains called the Kopet Dag (bordering Iran and Turkmenistan) today.
- Parthian - Belonging to Parthia, the westernized version of the native name Parthava.
- Parthav, Parthava - See Parthia, Parthian, Pahlavan.
- Persia - Western/English version of Pars (see above). A name given by the classical Greeks writers to Aryana since Pars was at one time the dominant kingdom of Aryana. Pars was earlier known as 'Parsa' and Arabized to 'Fars' since Arabic does not have the letter 'p'.
- Persian - Persian mean 'from Persia' such as its people and language. However, 'Persian' is commonly used to mean 'belonging to all of Aryana'. Persian was known locally as 'Parsi' and Arabized as 'Farsi' since Arabic does not have the letter 'p'.
- Rig Veda* - Oldest *Veda* (see below) written in a language similar to the language of the *Avesta*.
- Rivayet* - A collection of epistles (formal instructive letters or dispatches) documenting correspondence about a wide variety of topics related to orthodox Zoroastrian customs and practice. Changa Asa (1450 to 1512 CE), a community leader of the Parsi-Zoroastrians of Navsari, Gujarat, India, organized the sending of a representative to the Zoroastrian High Priest in Yazd, Iran with a set of questions on orthodox religious practice. The first representative was Nariman

Hoshang who returned to India with answers to the community's questions in 1478 CE. A series of missions followed for the next two hundred years, and the answers brought have been collected and named the *Rivayats*. Some of the representatives who travelled to Iran were Kama Bohra (1528 CE), Shapur Bharuchi (1570 CE), Kaus Kama (1594 CE), and Kamdin Shapur (?). Persecution of Zoroastrians forced a pause in the visits until the mid 1700s when Mulla Kaus made the last such visit to Yazd and Kerman, only to be trapped in Kerman by the Qajars.

- Sasanian, Sasanid - The Persian dynasty that displaced the Parthian Arsacids as the king-of-kings, the overlords, of Aryana in the 3rd century CE. They were named after the eponymous founder of the dynastic line, Sasan. Author Tabari claims they were descendants of the Achaemenids. The Sasanians were the last Zoroastrian kings of Aryana and were deposed when Aryana was conquered by the Islamic Arabs in the mid-7th century CE. The last Sasanian king was Yezdegird III. Also spelt Sasanian.
- shah-nameh - General meaning in Persian: 'chronicle of kings'. Specifically: the 10th-11th century CE Persian poet Ferdowsi's work in verse titled the *Shahnameh*. The poet Daqiqi's shah-nameh is one of many that preceded Ferdowsi's work. Most of the earlier shah-nameh were in prose.
- Vedas* - Hindu scriptures of which the *Rig Veda*, the oldest, is written in a language similar to the language of the *Avesta*.
- Vendidad* - A book of the Zoroastrian scriptures, the *Avesta*. The name *Vendidad* is a later form of Videvdat, which is in turn a contraction of Vi-Daevo-Data, the law against devas or evil. The *Vendidad's* verses are used by priests in purification ceremonies. The *Vendidad* is also a store of Zoroastrian history. It contains the list of the nations of Old Aryana as well as an account of the deeds of King Jamsheed including his expansion of

- Aryan lands.
- Yasht* - A book of the Zoroastrian scriptures, the *Avesta*. It is said to contain pre-Zoroastrian-information. Each *Yasht* (commonly translated as worship) is a hymn dedicated to Zoroastrian-ideals together with the related angel (such as the ideals of friendship, the word as bond, and kindness, and the guardian of these ideals – the angel Mithra). Originally, there were thirty *Yashts*, one dedicated to each named day of the month. Today only twenty-one survive.
- Yasna* - A book of the Zoroastrian scriptures, the *Avesta*, which contains the liturgy for the preparation of the ab-zohr/haoma extract, as well as the Gathas or hymns of Zarathushtra. *Yasna* (also spelt *izeshne* in later texts) means service, prayers and dedications – i.e. words of worship (cf. Sanskrit *yajna* and *yana*). Priests recite the *Yasna* as part of the liturgy when performing their priestly duties and functions.
- Zand* - Classical (primarily Middle Persian) translations, explanations, interpretations and commentaries of the scriptures, the *Avesta*, are called the *Zand* or *Zend*. The *Avesta* accompanied by the *Zand* is called the *Zand-Avesta*. For our purposes, we use the term *Zand* to include all the Middle Persian religious texts that seek to complement the *Avesta* in its full extent of 21 books. Well-known works of the *Zand* are the *Bundahishn* and *Denkard*.
- Zartosht* - Middle Persian version of Zarathushtra.
- Zartoshti* - Middle Persian version of Zarathushtrian.
- Zarathushtra* - Founder of the Zoroastrian/Zarathushtrian creed/faith/religion and its core philosophy. *Zarathushtra* is the English transliteration of the original name in the Avestan language and is also spelt *Zarathustra*.
- Zarathushtri* - Name for a Zoroastrian, that some feel is more authentic since it is based on the original *Avesta* name *Zarathushtra* and not on the Greek-based

- corruption Zoroaster.
- Zarathushtrian - See Zarathushtri.
- Zoroaster - Western version of the name Zarathushtra.
- Zoroastrianism - Western name for the religion, faith and philosophy based on the teachings of Zoroaster/Zarathushtra. Authentically called Mazdayasni (Worship of God) and Behdin (Good-Religion).



IS THE TERM 'ZOROASTRIAN' ZOROASTRIAN?

'Zoroastrian' & 'Zoroastrianism' are modern English terms used in English language communications such as this monograph. These terms are not found in ancient 'Zoroastrian' texts. If not, then by what name was the religion known previously?

The internal name: the *Avesta* calls the religion 'Mazdayasna' and 'Mazdayasna Zarathushtrish'. Some modern writers use 'Mazdean'.

The external name: classical European writers called Zoroastrianism the Religion of the Magi – 'Magiæ' or 'Magian' if you will. To this day Arabs call Zoroastrians 'Majus' (i.e. Magian). Islamic writers called Zoroastrian lands 'Mughistan' (from 'Mugh/Magha').

In *Alcibiades I*, Greek philosopher, Plato cites the Magism (or Magianism) of Zoroaster (his original name being Zarathushtra). In his *Lives of Eminent Philosophers*, Diogenes Laertius calls Zoroaster the first Magian. Similarly, Agathias in his *Histories* calls Zoroaster the founder of the Magian religion, i.e., the founder of the Magi's doctrine. The terms 'Religion of the Magi', 'Magian Religion' and 'Magism' are therefore synonymous with 'Zoroastrianism'.

Classical authors Herodotus and Strabo knew of only one Persian religion. Albert de Jong in *Traditions of the Magi: Zoroastrianism in Greek and Latin Literature* states, "There is no trace of a plurality among the Iranians. On the contrary, in the (Greek and Latin) classical texts, only one religion is recognized: the religion of the Persians. This religion is often connected with the name Zoroaster, who enjoyed a wide reputation in the ancient world as the founder of the order of the Magi, and by extension as the founder of the wisdom and religion of the Persians."

'Persia' was the name classical Greco-Roman authors used for ancient Iran, Aryana, because Persia was then the dominant Aryan nation. Persia was to Aryana what England is to Britain today. At its start, Zoroastrianism was not a 'Persian' religion since the kingdom of 'Persia' had not been formed when Zoroaster/Zarathushtra lived. It was then an Aryan or Iranian religion with Kayanian Balkh (in Afghanistan today), the dominant Aryan nation, as its center. After the formation of Persia and the Persian Empire, Persia became the center of Zoroastrianism until the Arab invasion around 645 CE.

THE MAGI & HEALTHY LIVING

The disciples and successors of Zoroaster, the Magi, are an order of seers who are dedicated to the service of the Divine. They are found among the Persians, Medes, Chaldeans, Parthians, (H)areians, Bactrians, Chorasmians, and the Saka.

Since their profession as the Magi makes it incumbent on them to observe strict rules of life, the Magi have strong constitutions and live to a great age.

Lucian of Samosata (2nd century CE)

PART I RESEARCH & DISCUSSION

1. Was Zarathushtra a Vegetarian?

A rare reference to Zarathushtra's (Zoroaster's) diet is contained in classical Roman author Pliny's *Natural History*. We also have comments related to diet in Zarathushtra's hymns, the Gathas, as well as in the Gathas' Middle Persian (Pahlavi) Zand translations. Given that Zarathushtra composed the Gathas, we may reasonably surmise that any allusion to diet or the killing of animals in the Gathas reflects Zarathushtra's own principles.

A. Zarathushtra's Diet of Cheese

Pliny the Elder (23 – 79 CE) in his *Natural History* noted:

“It is reported that Zoroaster lived in the deserts (wilds) on cheese so temperately (moderately/frugally) for twenty years that he did not feel the effects of old age.” (KEE – all translations in this monograph are by K. E. Eduljee unless otherwise stated.)

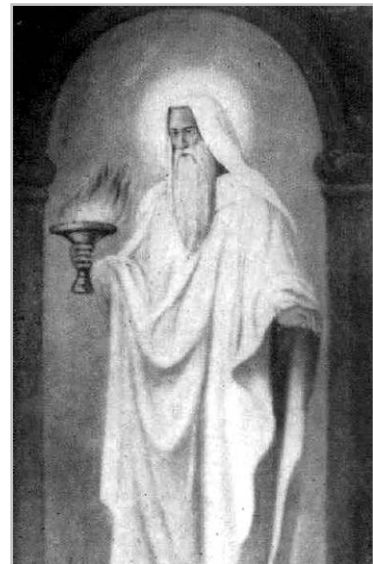
J. Bostock translates the last words in the passage as, “...that he was insensible to the advances of old age.”

(i) Cheese, No Meat, Moderation, Self-Control & Shunning Gluttony

[It would be unreasonable to expect that Zarathushtra subsisted for twenty years on cheese alone. More likely, cheese consumed frugally was central to his diet as it was with the Magi's diet that comprised, as we will read later, of cheese, vegetables and bread.]

The short statement by Pliny above contains a number of values, qualities of character, guiding principles and life-style choices that lie at the heart of the Zarathushtrian ethos. A life-style choice and diet such as this would not be possible without a firm ethic, will power and exemplary self-control.

Pliny's passage further states that Zarathushtra consumed cheese, a simple food, in a temperate or moderate manner, implying first that he consumed cheese in small amounts, and second that he did not engage in gluttony or the eating of rich foods. We can infer that he ate what his body needed to function in an



A portrait of Zarathushtra
- an artist's impression.

optimal manner – not more and not less.

A further implication reiterated in Zoroastrian texts is that rich, indulgent foods are harmful to health, longevity and the soul as well. Other classical Greco-Roman and Zoroastrian texts amplify Pliny's statement.

B. Zarem Raoghna – Soul Food

There is a dairy product closely related to cheese that bears mention here. Called *zarem raoghna* in the *Avesta* and *roghan* in later texts, it is extolled in Zoroastrian texts as the “best food”. ‘Zarem’ means ‘spring’ (season). The Avestan ‘*raoghna*’ evolved to ‘*roghan*’ in Middle Persian, which in turn translates as ‘oil’ or ‘butter’ in English.

The Avestan Hadhokht Nask, which is concerned with the fate of the soul after a person's passing away, states, “Their food is the exalted *zaremyehe raoghnahe*; for them who from youth are of good thoughts, of good words, of good deeds, of good faith – (it is like) the food of the after life...” (KEE). The Middle Persian text *Dadistan-i Denig*, which we cite further below, also notes that *zarem raoghna* is the earthly representative of the soul's heavenly food.

This author proposes that in Zoroastrian texts ‘*raoghna*’/‘*roghan*’ means ‘clarified butter’¹ – similar to the Vedic ‘*ghart*’ meaning ‘*ghee*’². [In old Iran, clarified butter was a valued commodity used to make payments.³] Therefore, we can translate *zaremyehe raoghnahe* (*zarem raoghna* for short) as ‘spring clarified butter’.

Cheese (*paneer* in Middle and New Persian) and clarified butter are made from milk. All three play a significant role in Zoroastrian-Aryan tradition – milk in health-giving and healing *haoma* extracts and cheese in diet. In turn, *zarem raoghna* – clarified butter made in spring – is extolled as the best food in the world, the earthly representative of soul food.

C. Mid-Spring Milk, Clarified Butter & Cheese

The Middle Persian *Dadistan-i Denig* (Religious Decisions) further develops the concept of *zarem raoghna* by calling it *maidyo-zarem roghan* in the Middle Persian language. Since ‘*maidyo*’ means ‘mid’, we can translate ‘*maidyo-zarem roghan*’ as ‘mid-spring clarified butter’.

The *Dadistan* adds that the most efficacious of all dairy products is *maidyo-zarem roghan* made from milk drawn in the second month (Ardwabisht/Ardibehesht) of the year, i.e., when Mihr (the Sun) was in the constellation Tora (Taurus) – a month scripturally designated as part of

¹ See Appendix III.1.

² See Appendix III.1.E.

³ See Appendix III.1.C.

spring (*zarem*), i.e., April-May in today's Gregorian calendar or mid-spring.

[Since the Sun appears to 'move' through twelve constellations in its celestial 'path', the Zoroastrian-Aryan method of specifying a month by the Sun's position in a constellation is dynamic and the description holds true for a specific era only – in this case the Age of Varak (*varak* meaning lamb/ram) i.e. the Age of Aries. The Sun would have resided for the entire second month of spring within the star constellation Tora (Taurus) sometime between 2,100 and 1,700 BCE. This may be an indication of when the *Dadistan's* original ancient source text was composed.]

The Middle Persian *Menog-i Kharad* reiterates that *maidyo-zarem roghan*



Simple *paneer*. Image credit: Wikipedia.

(mid-spring clarified butter) is the most beneficent of foods and the Avestan *Visperad's* Pahlavi commentary confirms that spring milk is "the best".

It stands to reason that cheese (*paneer*) made from spring milk should also be the best among cheeses made throughout the year.

One reason for the remarkable health-giving efficacy of clarified butter or cheese made from mid-

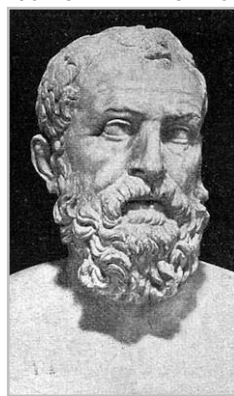
spring milk could be that cows feeding on fresh spring grasses ate (and pre-digested for us) wild herbs growing amidst the grass.

D. Cheese & Herbs – an Ancient Tradition Survives

Today, if mid-spring cheese made from free-ranging cows' milk is not available, the next best alternative is to eat herbs and vegetables with the cheese.

Diogenes Laertius, a 3rd century CE Greek biographer from Alexandria, Egypt, citing 2nd century BCE biographer Sotion of Alexandria, states that the diet of the Magi of his time was "cheese (*tyros*), vegetables and coarse bread" and that the Magi ate cheese by piercing bits of it with a stick they carried with them.

It would be reasonable to expect that the Magi followed the example of Zarathushtra in their diet.



Diogenes Laertius

During this author's stay in Iran, he was introduced to the popular tradition of dining on a simple meal of cheese (*paneer*), flatbread (*naan*) and herbs or vegetables that can be eaten raw (*sabzi khordan*) – herbs and vegetables such as tarragon, basil, mint and parsley together with, say, onions, radish, and even walnuts.

The amount of cheese consumed in this manner is moderate and in keeping with the Zarathushtrian principle of moderation.

It would seem that unbeknownst to most, an ancient Zarathushtrian dietary tradition survives to this day in the guise of daily fare.

(i) Unleavened Bread from Barley

Unleavened flat bread made from ground whole grain barley may be closer to the original Zarathushtrian/Magian diet than today's leavened bread made from refined flour.

2nd century CE Syrian author Lucian of Samosata⁴ stated, "The Chaldean (Magi) are said to live to above a hundred years in age. This is attributed in part to their custom of feeding on barley bread, which they say sharpens the sight. By this kind of diet their senses in general are said to be quicker and stronger than those of other people."

E. Sustenance in Winter

In those climate zones that did not permit year-round agriculture, plant foodstuffs that lent themselves to drying and storing would have provided a year-round source of food – plant foods such as dried grains, rice, beans, lentils, herbs, fruits and nuts. When fresh herbs and vegetables were unavailable to eat with barley bread and cheese, nuts such as walnuts may have been eaten as substitutes.



A morsel of *paneer*, walnuts and *sabzi khordan* (here mint, spring onion, basil and radish) wrapped in *naan*.
Image credit: Nazderavian.



A *sabzi khordan* selection – tarragon, mint, radish and spring onions. Image credit: Nazderavian.

⁴ Samosata stood on the east bank of the River Euphrates in what a region that is part of modern-day Turkey.

The Iranian tradition of storing dried herbs, fruits and nuts is associated with yet another noble tradition – that of sharing and ensuring those unfortunate enough not to have a store of foods would not go hungry.

(i) Gahanbars & Jashns – Mutual Help and Caring

Instituted by scripture, gahanbars are six seasonal festivals or high feasts when Zoroastrians assemble to eat and share food communally. Partaking in the feasts with their attendant rituals brings enjoyment and comfort to mind, body and soul. Traditionally, each feast lasted for five days.

A jashn (called jashn in Iran and jashan in India) celebrates a joyous occasion such as a thanksgiving, some other important event or a significant day of the calendar. Jashns can include gahanbar-like feasts and the very first jashn recorded in legend is Jashn Sadeh (see frontispiece), instituted to celebrate the discovery of fire by King Hushang, the first formal king of the Aryans in the *Avesta*.⁵

For the people engaged in the procurement, preparation and distribution of food at gahanbar and jashn feasts, their efforts stand as a service to the community. In addition to sustaining its members, the preparation of the food and its communal sharing helps in building and maintaining the health and spirit of the community.

A hot vegetarian soup called *aush/aash* is often served at a traditional Iranian Zoroastrian jashn. Dried fruits and nuts called *khushk baar/meevayh*⁶ (known commonly as *ajil* or *lork/lorg*) are also distributed.



Aush-e Reshte. Image credit: Wikipedia.

One common variety of *aush* is *aush-e reshte*, a stew-like soup made with whey (*kashk*), finely chopped herbs and previously soaked dried legumes and lentils. Persian noodles (*reshte*) complement the soup. Besides providing balanced nutrition, the soup is said to have healing powers that help restore those who are ill to good health.

⁵ The poet Ferdowsi in his *Shahnameh* names Hushang's grandfather Gaya Maretan/Gayomard as the first king.

⁶ '*Baar*' means 'fruit' or '*meevayh*', 'produce', 'load' and 'tree output'.



Khushk baar/meevayh (ajil/lork), nuts and dried fruits mixture.
Image credit: Nazanin Niknam at vcn.

Khushk baar/meevayh (ajil/lork) is a mixture of seven (seven being an auspicious number for Zoroastrians) dried nuts and fruits: pistachios, roasted chic peas, almonds, hazelnuts, figs, apricots, and raisins (*pasteh*, *nakhudsheek*, *baudom*, *fandook*, *anjeer*, *zardaaloo* and *keshmesh* respectively). Some substitutions are made according to locale, availability, taste (salty or sweet) and family preferences. Roasted squash seeds, roasted melon seeds, walnuts, cashews, and dried mulberries (*tokhmeh kadoo*, *tokhmeh hendooneh*, *gardoo*, *kaushu* and *tut* respectively) are possible substitutes.



Praying the Afrinameh over Gahanbar foods. Yazd, Iran.
Image credit: Nazanin Niknam at vcn.

This author noticed that towards the close of community gatherings in Iran, the hosts invariably distributed dried fruits and nuts (often blessed by a prayer) to all the guests as a take-away. Everyone, regardless of their station, accepted the offering with thanks.

Beneficence – mutual helpfulness and caring – has always been the central pillar on which Zoroastrian communities have been built over the centuries.

F. Zarathushtra's Gathas

(i) King Jamsheed as the Originator of the Sin of Meat Eating

Verse 32.8 of the Gathas, the hymns of Zarathushtra, starts with a condemnation of legendary King Jamsheed – a great and noble king turned sinner. Modern authors translate the remaining lines differently.

The verse's Middle Persian Pahlavi translation – as well as the Sanskrit translation by 12th or 13th century CE Parsi scholar Neriosangh Dhaval – support the following English translation:

“Among the sinners we hear of Yima Vivanghat (King Jamsheed's ancient Avestan name), who taught humans the enjoyment (craving) of our (beneficent) animals eaten in portions (butchered?). From all such, may I (Zarathushtra) stand apart in Your ultimate discernment O Mazda.” (KEE)



The once great Aryan King Jamsheed on his throne being elevated by divs. There are several implications conveyed by this mythical scenario: first, the divs supported Jamsheed's kingship and elevated him to the status to a demi-god. The divs themselves are portrayed as being demonic, the antithesis of a righteous person.

Image details and credit: This image is part of a Timurid (Ebrahim Soltan) *Shahnameh* manuscript created in Shiraz and dated to c.1435–1440 CE. The manuscript folios are presently at the Fitzwilliam Museum, University of Cambridge, UK.

To be fair, we have found one reference in a Pahlavi *Rivayet* that seems to imply that Jamsheed tried to prevent the sin of meat eating, a practice initiated by the divs. Regardless to whom legends assign the blame, since eating meat is consistently associated with the killing of beneficent animals, the practice of meat eating is uniformly decried by implication.

(ii) Lament of Geush Urvan & Animals

The Gathas' second chapter opens with the lament of Geush Urvan seeking a protector from violence, death and evil. '*Urvan*' means soul in the

Avestan languages. 'Geush' has two primary meanings: the 'kine' (cattle) and 'creation' or 'life'.

In his *Essays on the Sacred Language, Writings, and Religion of the Parsis* 19th century Sanskrit scholar Martin Haug noted, "Geush Urva means the universal soul of the earth, the cause of all life and growth. The literal meaning of the term, 'soul of the cow' implies a simile; for the earth is compared to a cow." *Gaus*, notes Haug, conveys two meanings in Sanskrit, 'cow' and 'earth'.

(iii) Tradition of Aryan/Iranian Poets & Gathic Poetry

Zarathushtra stands first amongst a long line of illustrious ancient Iranian poets who developed the tradition of composing verses that conveyed several meanings in layers. They perfected the art of using allegory, metaphor and the simile.

(iv) Allegory in the Geush Urvan Gatha

It is, therefore, quite possible that Zarathushtra intended both meanings of 'geush' – kine and earthly life – to apply in the Geush Urvan Gatha as primary meanings that produce observable truths: the indiscriminate killing of animals and an abuse of nature. He may have intended secondary meanings as well. The flock of Geush Urvan could be a metaphor for Zarathushtra's community of followers who were being harassed and murdered for their beliefs. Yet another meaning could be the utter depravity that existed in Zarathushtra's homeland prior to his ministry.

The master poet will ensure that the discovery of less apparent meanings do not invalidate primary meaning(s). All meanings remain valid.

If the Gathas do indeed take a multiple meaning approach for even the primary or apparent meaning(s), the Middle Persian Pahlavi translations of this Gathic chapter explicitly decry the killing of beneficent animals as the primary meaning. One Pahlavi translation of the chapter has Geush Urvan saying, "The indiscriminate slaughter makes my life in all things hateful". The statement is followed by a plea for safe pastures for the *gospand*⁷, beneficent animals.

⁷ This author proposes that Middle Persian '*gospand*' is derived from the Avestan '*gao-spenta*' – '*gao*' meaning 'cow', and '*spenta*' meaning 'beneficent' in this context. While in New Persian '*gosfand*' means 'sheep', in the Middle Persian context of our references, '*gospand*' appears to mean all useful/beneficent animals that could be domesticated as livestock – those that provided food as milk and cheese, fibre, transportation, labour as beasts of burden and for tilling, threshing and other such tasks. The category may have included fowl as well. [*The New Persian replacement of 'p' with an 'f' in '*gospand*' is likely part of the Arabization of the Persian language as in the transformation of 'Parsi' to 'Farsi'.]

In a Pahlavi rendition of the Geush Urvan Gatha, Geush Urvan is identified as the *gospands'* (beneficent animals') *ruban* (soul). '*Gospand's'* modern rendition means 'sheep'.

The '*vasta*', the protector of the herd or flock, in Gatha Y. 29.1's "*noit moi vasta Khshmat Anyo*" can thereby be read as "there is no shepherd/pastor other than You (Mazda/God)". The last line "*moi sansta vohu vastrya*" can read as "lead me to good (and safe) pastures."

Compare these lines with the Judeo-Christian Psalm 23 (of David) "the Lord is my shepherd" "He leads me to green (and safe) pastures" "He restores my soul".

Scholars of comparative religion inform us that Zoroastrian concepts influenced Jewish (and thereby later Christian) theology especially during the exile of Jews to Babylon and immediately after their liberation by King Cyrus the Great.

(v) Geush & Gospand

The Middle Persian Zoroastrian translations and texts equate '*geush*' with '*gospand*', the latter meaning 'beneficent herd or livestock animals' in context.

Neriosangh Dhaval also translates '*geush urvan*' as the 'soul of the herds' – herds of all beneficent animals.

(vi) Soul of Animals

The concepts in the Gathic chapter that contains the lament of Geush Urvan are further amplified in verse 39.1 of the *Yasna*, which states:

"(Know) this that we revere Geush Urvan and all our forms as well as the souls of animals who are living as we are. They are to us as we are to them." (KEE)

The passage states that 'we', i.e. Zoroastrians, revere the souls of animals in the same manner as we revere the souls of humans. These sentiments lead us to the distinction between life forms that have a soul (perhaps sentient), and organisms such as plants that are organic and living, but which do not have a soul.

The further implication is that eating plants that do not have a soul is acceptable while killing/eating beneficent animals that have a soul is unacceptable to the tenants of the faith.



2. Ancient Aryans Were Gatherers. But Were They Hunters?

A. Legends Preserved in Ferdowsi's *Shahnameh*

Legends preserved in the poet Ferdowsi's epic, the *Shahnameh*, offer us a possible answer to the question: Prior to the advent of Zoroastrianism, were ancient Aryans vegetarian? Ferdowsi's principal source of information and legend was the Middle Persian (Pahlavi) Zoroastrian work, the *Khvatay-Namak*, later known as the *Khodai-nameh*.⁸



Ferdowsi

(i) Aryan Stone Age – Age of Gaya Maretan & Gathering Foods

The *Shahnameh* informs us that during the Aryan Stone Age – the Age of Gaya Maretan (Gayomard, Kaiumars) – people sustained themselves by gathering fruits and other plant foods. Later in the Stone Age, people began to domesticate animals and the concept of domesticated livestock – herds of beneficent animals – developed.

(ii) Aryan Metal Age – Age of Hushang & Agriculture

The *Shahnameh's* legends then say that during the Age of King Hushang – the Aryan Metal Age – the planting and harvesting of crops began.

Archaeological finds at the base of the Kopet Dag Mountains' (bordering today's Iran and Turkmenistan and which in ancient times were in Parthava/Parthia) northern slopes, have provided evidence of what might be some of the oldest settled agrarian communities known to humankind. Early Aryans also developed an underground system of water irrigation called *karez*. The system prevented evaporation and pollution of water as it travelled from the rain catchment area of the foothills to the plains.

The legends do not mention hunting until later in history. What we read is that before the advent of farming, Aryans were gatherers of plant foods. Nevertheless, do these legends say anything about the advent of eating animal flesh? The lines in the next section translated from Ferdowsi's *Shahnameh* give us a possible answer.

[The information supplied by Ferdowsi is consistent with the sentiments regarding meat eating in surviving Zoroastrian texts – with one difference. While Zoroastrian texts see pre-Zarathushtra King Jamsheed as the monarch who introduced meat eating, Ferdowsi transfers that blame to King Jamsheed's antagonist, the 'foreign' King Zahhak who overran ancient Iran.]

⁸ Ferdowsi wrote the verses of the *Shahnameh* in New Persian when the language had just evolved from Middle Persian – and was fast becoming contaminated with Arabic words. Ferdowsi expunged as many Arabic words as possible in the New Persian lexicon he employed.



(iii) Seduction of Zahhak by Ahriman's Cooking

In one of the earlier legends of the *Shahnameh*, King Zahhak (perhaps Assyrian but who Ferdowsi 'Arabized') overthrew Aryan King Jamsheed and conquered ancient Iran, Aryana. In this legend, Ahriman⁹, the devil incarnate and leader of the evil divs who plagued the life of the good Aryans, brings Zahhak under his control by becoming his cook and then seducing him with a taste and fondness for meat. What follow are the overthrow of King Jamsheed by Zahhak and the completion of the first great Aryan tragic cycle – Aryan lands that had risen to great glory during the reigns of King Hushang, Tahmuras and Jamsheed's early reign, now fell on evil times.

The following is this author's rendition of the Arthur and Edmond Warners' translation of Zahhak's seduction by Ahriman in the *Shahnameh*:

Ahriman plotted. "Let me," he mused,
"Present myself as a famed and noted cook,
And with my cooking, find favour with the king."
*Foods then were few, yet people did not kill to eat
But lived on the earth's produce of vegetal.*
Scheming the evil-doing Ahriman designed
To slaughter and serve both bird and beast.
Zahhak would thus by his appetite be seduced
And when possessed by a carnal lust for blood and flesh,
Would as a slave obey and do all Ahriman's bidding yet.

In youth form well-spoken, clean, and clever,
With fawning words of praise and promise,
Ahriman presented himself to Zahhak
Who commanded his faithful minister
To give the div the royal kitchen's keys.

Ahriman prepared first a meal of yolk,
Whose flavour the monarch relished so
That he praised the wily Ahriman, who replied thus,
"Illustrious monarch! Forever live!
Tomorrow I will serve yet more and please you well."

All night the evil div pondered,
What strange repast to proffer on the morrow.

When the azure vault brought back the golden orb
Ahriman presented the monarch a lavish meal
Of partridges and silver pheasants as never seen.

⁹ Iblis, the Islamic word for the devil, is used in place of Ahriman in some *Shahnameh* manuscripts.

The Arab monarch gorged himself, and lost
His diminutive wits in awe and admiration.

On the third day, Ahriman served lamb and fowl,
And on the fourth a saffron flavoured joint of veal
With rosewater, musk and rare old wine.
The evil one then counselled the king,
‘Tis blood that gives muscle and strength
And will make the monarch lion-fierce.

When Zahhak had feasted on blood and flesh,
In wonder of his cook’s ability said,
“Worthy friend! Ask now your recompense.”
His scheme fulfilled, the Darkness answered,
“Live, O king! In wealth and power.
My heart does throe with your favour of my soul’s food.
Yet if could I ask one boon above my station
‘Tis leave to kiss and lay my eyes upon your shoulders.”
Surprised Zahhak replied, “I grant it; it may do you grace.”
Permission thus received, Ahriman kissed
The monarch’s shoulders and swiftly vanished.
A marvel followed,
For from the monarch’s shoulders
Sprouted two demonic black snakes.

Distraught, Zahhak sought a cure.
Finding none, he excised them,
But lo! They grew back again!
Like strange branches from a tree.
The ablest leechers summoned gave advice in turn
And used their curious arts, though all in vain.
Then in leech form Ahriman himself appeared
“This was your destiny,” said he.
“Cut not the snakes but let them live.
Give them men’s brains and gorge them till they sleep.
Such food may kill them.
It is the only means.”

The purpose of the foul div pray shrewdly scan;
Had he conceived perchance a secret plan
To rid the world of all trace of man?

The words above are fairly clear. Before Zahhak’s seduction by Ahriman, people did not eat meat. In other words, they were vegetarian. The legend does not end with that answer. When Ferdowsi’s legend made Ahriman the initiator of eating slaughtered animal flesh, he could not have made his

point about the ethics of eating animal flesh for food more emphatically. Since the practice of meat eating requires killing life, it is not hard to see why he placed the practice under the domain of Ahriman, the lord of death, the lord of not-life.

Further, once gripped by the taste of meat and blood, Zahhak became a slave to Ahriman. Perhaps Ferdowsi was trying to say that meat eating is an addiction to which people become enslaved.

The philosophical underpinnings of this symbolic mythology are profound. They establish the place and role of human beings in the scheme of creation. They also make respect and reverence of animal life an ethical imperative – the antithesis of which is deemed evil. The implication that killing, tasting blood and eating meat are addictive, harkens to an implied subversion of free will and objectivity – that once enslaved by addiction, the human mind becomes a victim to base desires and ambitions represented mythically by Ahriman and Zahhak's relationship. By extension, overcoming carnal temptations for dead flesh is a triumph of right-mindedness over base desire – a lesson for any form of addiction.

When read in conjunction with other references to nutrition and health found elsewhere in Zoroastrian texts, what we gather is that the type of food we consume is directly manifest in our health holistically – not just in the health, vitality and longevity of our mortal frames, but in that of our minds and spirit as well. The ancient Avestan wisdom contained in the Zahhak-Ahriman legend as retold and preserved by Ferdowsi in his *Shahnameh*, profiles meat eating as being one of the principal negative influences on the human body, mind and spirit. ❧❧

3. Introduction of Meat Eating after the Arab Conquest

Author E. W. West informs us that in Chapter 39 of a *Bundahishn* manuscript belonging to Tehmuras Dinshawji Anklesaria of Bombay, he found a notation stating, "The Arabs rushed into the country of Iran in great multitude... and their own irreligious law was propagated by them and many ancestral customs were destroyed, and eating of dead matter was put into practice. ...From the original creation until this day, evil more grievous than this has not happened...."

Perhaps the poet Ferdowsi had a purpose in the Arabization of Zahhak.

4. Stages of Consumption at the Beginning & End of Human History

The stages in which humankind began consuming water and foodstuffs (together with the prediction that the stages will be reversed at the close of human history) are outlined in the Middle Persian *Bundahishns*. They tell us that at the outset of history, humans first consumed water, then vegetables, then milk, and lastly meat. Close to the end of human history, the stages will be reversed. People will desist first from eating meat, then vegetables and then milk – finally existing on water alone until the end of the present existential phase and the beginning of everlasting peace.

This event will occur when a coming saviour will lead the world to an ideal existence and death will be no more. It stands to reason that this includes the death or killing of animals – possibly the *Bundahishns'* answer to the lament of Geush Urvan beseeching God for a saviour and safe pastures.



5. Achaemenid Era Practices of the Magi

A. Different Norms for Different Orders of the Magi

According to 3rd century CE Phoenician-Tyrian philosopher & vegetarian advocate Porphyry in his work *De Abstinentia*, “The first and most learned order of the Magi neither eat nor slay any thing animated, but adhere to the ancient abstinence from animals. The second order (of the Magi) uses some animals indeed (for food) but do not slay any that are tame*. Nor do those of the third order, similarly with other men, lay their hands on all (tame) animals.” (Adapted by this author from the translation by T. Taylor.)

[*Likely the *gospand* of Middle Persian texts.]

We note here that it was only the highest order of the Achaemenid era Magi (say, the dasturs of today) who adhered to the ancient practice of abstinence from killing animals or meat eating. Porphyry notes that while the lower orders of the Magi hierarchy did eat meat they did not kill “tame” animals, which we presume included domesticated, livestock or herd animals i.e. the *gospand*. One scenario is that the higher orders of the Magi maintained Zarathushtra’s exemplary lifestyle and dietary choices as part of their strict code even when large segments of the population had become meat eaters.



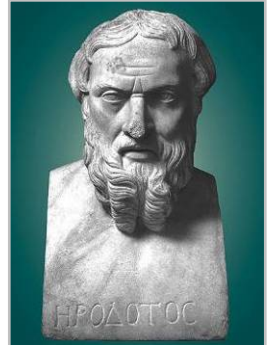
Porphyry

B. Changing Mores

Perhaps unaware of the finer distinctions that Porphyry would note, 5th century BCE Greek author Herodotus generalized by stating in his *Histories* that the Magi were required to pray over the cooked flesh of an animal slaughtered by a member of the Persian laity.

In reading the various Greco-Roman reports collectively, what we gather is that by the time the Persian Achaemenids ruled Aryan lands – from, say, the 7th century BCE onwards or perhaps even following Median rule from, say, the 9th century BCE onwards – ‘Persians’ (Zoroastrians) no longer uniformly adhered to the “ancient abstinence from (eating) animals”.

The desire to restore the ancient practice of a vegetarian diet amongst Zoroastrians nevertheless continued to persist as late as the Sasanian era (3rd to 7th century CE). That desire is evidenced by the explicit admonitions of Sasanian era high priests we cite next – admonitions that are today either forgotten or ignored.



Herodotus

6. Call to be Vegetarians in Sasanian Era Medieval Zoroastrian Texts

A. Sasanian Head Priest Adarbad Mahraspandan

Perhaps the most explicit call for Zoroastrians to be vegetarian is found in the *Sayings of Adarbad Mahraspandan*¹⁰, which states:

“Abstain rigorously from eating the flesh of kine and all beneficent animals (*gospandan*) lest you be made to face a strict reckoning in this world and the next; for by eating the flesh of the kine and other domestic animals, you involve your hand in sin, and (thereby) think, speak, and do what is sinful; for though you may eat but a mouthful, you involve your hand in sin, and though a camel be slain by (another) person in another place, it is as if you (who eat its flesh) had slain it with your own hand.” (Translation by R. C. Zaehner and adapted slightly for consistency.)¹¹

¹⁰ Zoroastrian high priest (*mobed-i mobedan*/mobed of mobeds) and prime minister during the reign of Sasanian King Shapur II (309-379 CE), Adarbad Mahraspandan is said to have ‘purified’ the *Avesta* and fixed its number at 21 nasks (books), 21 being the number of words in the Ahunavar prayer. Highly regarded and considered a saint, he is likely the Adarbad Mehersafand mentioned in the *Qissa-e Sanjan*.

¹¹ We are grateful to Zaneta Garratt for bringing this passage to our attention.

B. Hudinan Peshobay Head Priest Adarbad Emedan

In addition, Hudinan Peshobay¹² High Priest Atrupat-e Emetan (Adarbad, son of Emedan) who officiated after the Arab invasion states in Book 6 of the 9-11th century CE Middle Persian (Pahlavi) *Denkard*:

“Be plant-eaters (*urwar khwarishn* i.e. vegetarian), O you people, so that you may live long. And stay away from the body of beneficent animals (*gospand*). As well, deeply consider that Ohrmazd the Lord has for the benefit of useful animals (and humans) created many plants.” (KEE)

(i) Beneficent Vegetarian Animals & Nature’s Bounty

High Priest Adarbad’s admonition to deeply consider the scheme of God, Ahura Mazda’s creation, leads us to ponder if the definition of *gospand*, beneficent animals, includes animals that are themselves vegetarian. The digestive systems of these animals allow them to efficiently digest plant foods that humans would not normally ingest. In doing so, these animals convert coarse vegetable matter into another food, milk, intended for less developed digestive systems such as their young. Milk thus contains plant materials converted to protein and other concentrated nutrients formulated by nature to foster nutrition and growth.

In contemplating the scheme of life, we need include to the earlier example of Zarathushtra’s frugal consumption of a milk product, cheese. The scheme of nature and our resultant dietary norms can be upset when the beneficent animals are fed unnaturally or if their milk and its derivatives are consumed excessively, immoderately and without due measure.



7. Modern Norms

Today, other than individuals or a group such as the Parsee Vegetarian & Temperance Society, we have no consistent practice of community-wide Zoroastrian vegetarianism. The Indian-Zoroastrian bastions of Irani-Parsi food, the Irani cafés, are noticeably non-vegetarian. Nonetheless, this author has heard Iranians state that according to tradition, consuming an excess of red meat and fats results in evil thoughts and makes a person selfish.

¹² The Hudinan Peshobay (meaning ‘leaders of the people of Good Religion’) were leaders of the Zoroastrian community who from the 9th century CE were required by the ruling Arabs to act as representatives for the entire (shrinking) Zoroastrian community.

A. Shift in Norms

The records we have just examined indicate that over the millennia, there has been a dramatic shift in Zoroastrian norms on the issues of slaughtering animals, cooking meat over an open fire as in barbequing, and eating (dead) flesh.

Hopefully, one Zoroastrian guiding principle that still survives in practice (if at times neglected) is the principle of moderation.

Where Aryan Vegetarianism Survives

Aryan vegetarianism survives in some forms of Hinduism, Jainism and Buddhism. Buddhism originated in the eastern Gangetic state of Magadha. Some scholars postulate that the Magi, the Magha, established Magadha. Their kings used the title 'Arya'. The Indian Aryans as well as the Bon who spread their faith from the Pamirs into Western Tibet, use the swastika symbol – though that is another story.



8. Principle of Moderation

The Zoroastrian guiding principle for many life-style choices (not moral or ethical choices) is moderation between the extremes of too much and too little. This guiding principle applies to food and drink as part of one's life-style choices.



9. Principles of Circumspection, Rightness & Beneficence

The principle of moderation does not preclude the need to apply the tests of rightness, goodness and beneficence to every choice – to check if something or an act is helpful or harmful – and then to desist from that which is harmful.

The ethical imperative for Zoroastrians is to engage in acts of beneficence – acts of goodness and helpfulness.



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PART III
APPENDICES

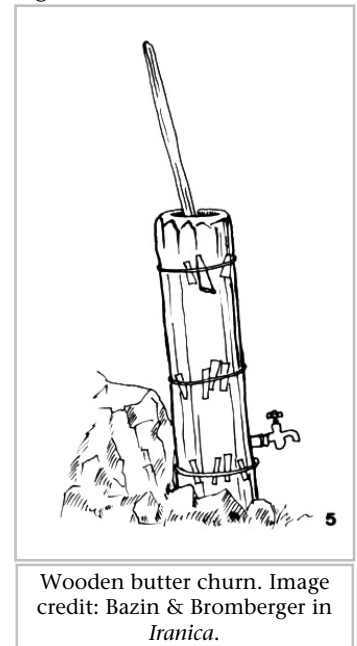
1. Paneer & Roghan in Aryana’s History & Traditions

A. Saka & Butter

The Saka were an Aryan group of whom the famed legendary heroes, the pahlavans Rustam and Sohrab, were members and from whom the Parthians had likely descended. During Achaemenid times, say 700 to 330 BCE, the Saka lived around the Aral Sea and east of the Syr Darya (Jaxartes) River – the Saka Para-Sugd meaning the ‘Saka beyond Sogdiana’ or alternatively Saka Para-Darya meaning the ‘Saka beyond the River’ (Syr/Jaxartes). In the Mahabharata, the Saka nation is mentioned together with several regional nations including Chin (China). Saka lands extended up to the borders of China.

Various Saka archaeological sites dating to between c.1000 BCE and 500 CE have been discovered east of the Caspian Sea up to the Tarim Basin and Mongolia. One of these sites is located in the region the Saka Tigrakhauda (who were also called Saka with the pointed hats) inhabited. The site, which is currently located in south-eastern Kazakhstan close to the ancient town of Issyk has yielded some well preserved artifacts that include clothing and gold armour that may have been worn by a prince or princess – and a very tall pointed cap. The artifacts date to between the 4th and 3rd centuries BCE.

Among the artifacts is a silver chalice with an inscription that archaeologists describe as being related to the Kharoshthi script. A tentative translation of the inscription includes the words “cooked fresh butter”, which if correct would mean clarified butter. In addition, Jeannine Davis-Kimball notes that “wooden beaters for koumiss (fermented mare’s milk) were also found in the tomb.” Beating milk leads to the production of cream and butter. Similar beaters have been found in the Ukok Plateau in the Altai Mountains dating to the 5th century BCE. We wonder if the wooden beaters found in the Saka sites were forerunners to the wooden butter churns described by Marcel Bazin and Christian Bromberger as being used in Iran and Afghanistan. If the identification of butter beaters/churns is correct, we wonder if the custom had any connection to the Avestan concept of *rogghan* (clarified butter) being the earthly representation of soul food. Besides the Avestan and Vedic references to clarified butter (that would have preceded



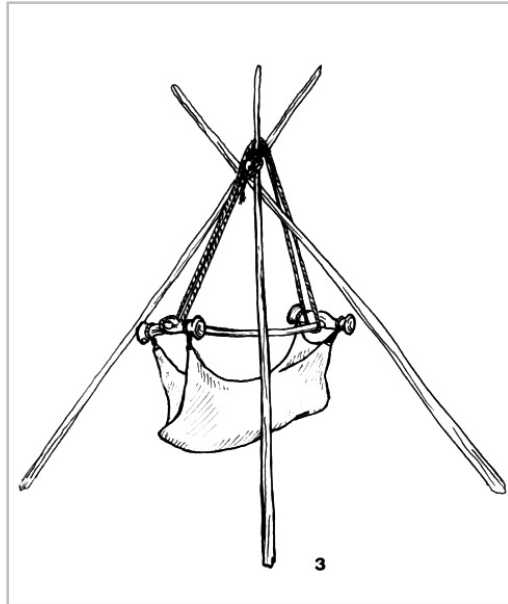
the site date), the Issyk and Ukok artifacts are among the earliest physical artifacts found that relate to butter or clarified butter.

B. Traditional Iranian & Afghan Milk Processing

According to Bazin and Bromberger, in Iran and Afghanistan, milk is rarely consumed in raw form but is processed to make *paneer* by heating, pressing, squeezing and drying, curds (NP *kashk*, Pashto *korot*), yogurt (NP *maast*, Pashto *maasti*), butter (NP *kara*, *maska*, Pashto *kuch*) from churned yogurt and buttermilk (NP *doogh*, Pashto *shlumbi*) as a by-product in the making of butter from yogurt.

Making butter from yogurt by means of vigorous agitation and churning is very common amongst Iranian and Afghan herders. Most of the butter is made into clarified butter (NP *rowgan*, Pashto *guri*) while most of the buttermilk is consumed as a beverage; the remainder is transformed into curds and related products.

While Iranian nomads commonly used churns made from goatskin bags (NP *mashk/keek*, Pashto *garchka*) suspended from a tripod, the variety of equipment used to churn milk testifies to the importance milk products played in the traditional diet of the Aryans.



Skin bag used to butter churn by shaking.
Image credit: Bazin & Bromberger in *Iranica*.

C. Clarified Butter as Payment in Medieval Iran

We read that in medieval Iran, clarified butter formed part of the payment peasants made to their landlords. Ann Lambton writes, “In many districts the landlord exacted, in addition to a share of the crop, so many days free labour from the peasants... and dues in clarified butter...” Further, “...this is an old custom...”

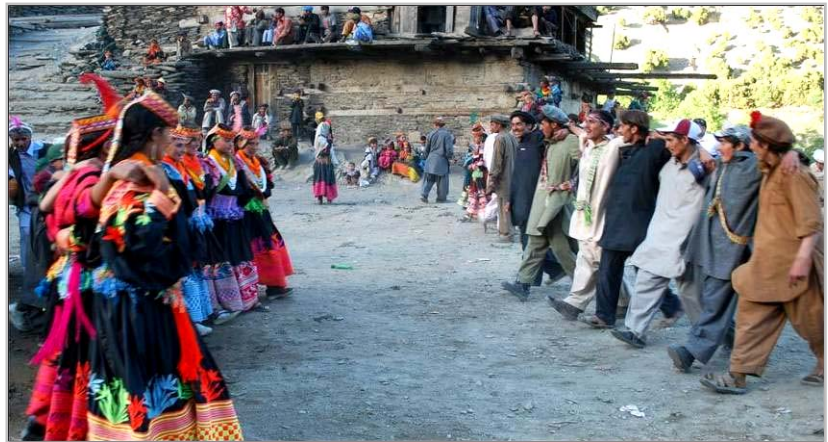
D. Milk Products in Kafiristan

Mountstuart Elphinstone in his book *An Account of the Kingdom of Caubul and Its Dependencies in Persia* writes, “The food of the common people is bread, croot [our note: croûte? Crust as in pastry?], clarified butter, and occasionally flesh and cheese. The shepherds and the villagers, in spring, also use a great deal of curds, cheese, milk, cream and butter. They also eat vegetables, and a great deal of fruit. Those in camps only get melons, but the settled inhabitants have all our best English fruits.” “Their drink is sherbet, which is made of various fruits, and some kinds of it are very pleasant.” In a

note Elphinstone adds, “The clarified butter keeps long without spoiling. The cream is either common cream, or a preparation called *kymauk*, which is made from boiled milk, and is something like clouted cream.” He also writes of butter being used as a balm for sore feet.

When Elphinstone wrote his account just under two hundred years ago, there was a district in Afghanistan’s Hindu Kush Mountains just south of Badakhshan – a district known to the Muslims as Kafiristan, the district of the non-believers. The district is known today as Nuristan having ‘seen the light’ by succumbing to the pressures of the hordes around them to abandon their ancient faith. Elphinstone’s account of Kafirs (spelt ‘Caufirs’ by him) is enlightening.

If time and opportunity avail themselves to this author, Kafiristan is worthy of a monograph unto itself. For the time being we will constrain ourselves and limit our observations to those of Elphinstone’s passages that relate to clarified butter: “The houses of the Caufirs are often of wood, and they have generally cellars where they keep their cheeses, clarified butter, wine, and vinegar.” “Their food is chiefly cheese, butter, and milk, with bread or a sort of suet pudding: they also eat flesh (which they like half raw); and the fruits they have, walnuts, grapes, apples, almonds, and a sort of indifferent apricot that grows wild. They wash their hands before eating, and generally begin by some kind of grace. They all, of both sexes, drink wine to great excess: they have three kinds, red, white, and dark-coloured, besides a sort of the consistence of a jelly, and very strong. They drink wine, both pure and diluted, out of large silver cups, which are the most precious of their possessions. They drink during their meals, and are elevated, but not made quarrelsome, by this indulgence. They are exceedingly hospitable. The people of a village come out to meet a stranger, take his baggage from those who are carrying it, and conduct him with many welcomes into their village.”



Celebrating the Chilam Josh May mid-spring festival (cf. the Zoroastrian Maidyozaem Gahanbar) in Kalash Kafiristan on the Pakistani side of the border.
Image credit: Pakimag.com

E. *Ghee* in Hindu Tradition

[*Ghee* is a form of clarified butter (see the next section). In Hindu scriptures, *ghee* is called *ghart*, go-ghart or *ghartam*. In modern Nepali, a Hindi dialect, it is called *gheeu* while in the old Tibeto-Burman aboriginal Nepali Bhasa it is called *ghya* cf. Avestan *gaya*.]

(i) *Ghee* in the *Panchamritha* Foods of Immortality

Ghee is one of the five *panchamritha* (i.e. *panch-amritha*), the five foods of immortality. The other four are rock sugar, honey, milk, and yogurt.

(ii) *Ghee* in the *Homa* Ceremony

Ghee is also a central part of the *homa/havana/havan* liturgy devoted to fire, *Agni*. In Zoroastrianism, *haoma* is the chief among the medicinal plants that can be pounded to extract their juice, a process ritualized in the Yasna liturgy. The Zoroastrian Yasna has a Hindu counterpart called the *Yajna*. In Zoroastrian ritual, *havan* is the mortar in which the *haoma* stalks are pound.

(iii) *Ghee* in Ayurvedic Healing

In *Ayurveda*, *ghee* is considered a *satvic* food – foods that on the one hand promote positivity, growth and heightened consciousness while on the other hand reducing negativity, negative emotions and the start or storage of feelings that sustain a negative state of mind.

Ayurveda holds that *ghee* is *medhya* meaning intellect promoting. *Ghee* consumption [judiciously, we add] is said to increase *dhi*, intelligence, refine *buddhi*, the intellect, and improve *smrti*, the memory. *Ghee* is also *rasayana* or vitalizing to the mind and body.



2. Milk’s Composition

Milk is a mixture of proteins, fats, carbohydrates, vitamins and minerals in water.

Composition of Cow’s Milk		
Main Ingredients	Range (%)	Average (%)
Water	85.5 – 89.5	87.0
Solids:	14.5 – 10.5	13.0
- Proteins:	2.9 – 5.0	3.4
- Caseins (76-86%)		
- Whey proteins (14-24%)		
- Fat (98% triacylglycerols)	2.5 – 6.0	4.0
- Carbohydrate (lactose)	3.6 – 5.5	4.8
- Vitamins & Minerals	0.6 – 0.9	0.8

A. Milk – a Food Designed by Nature

Nature has designed milk as a nutritious, composite and whole food for the growth of young animals. Zoroastrian tradition sees the milk products cheese and clarified butter as foods for humans of all ages.

B. Milk Vitamins

The vitamins in milk are of two types: water and oil soluble – all are natural multivitamins in a natural state. Throw out milk’s watery part (whey) and you throw out the water-soluble vitamins. Throw out the cream or butter and you throw out the oil soluble vitamins.

The water-soluble vitamins include B1, B2 and B12 including small amounts of B3, B5, B6, and C. The fat-soluble vitamins include A, D, E, and K. We read that mild pasteurization does not degrade the vitamins appreciably. However, prolonged high heat will degrade some of the water-soluble vitamins.

C. Milk Minerals

The minerals in milk include calcium, magnesium, phosphorus, potassium, selenium, and zinc together with small amounts of copper, iron, manganese, and sodium. About half are bound within the protein casein. The remaining minerals are dissolved in the milk’s water.

D. Milk Proteins

Proteins are an important part of our muscles, bones, hair and organs. Most enzymes and many hormones are proteins. Besides water, proteins are the largest components of human muscles, tissues and cells.

(i) Make-up of Proteins. Amino Acids

The building blocks of proteins are amino acids. Proteins are long chains of amino acid residues strung together. By themselves, amino acids play critical roles in the human body as neurotransmitters and in biosynthesis.

(ii) Essential Amino Acids. Milk has all Nine

While the human body can make (synthesize) several amino acids, it cannot make nine amino acids. These nine essential amino acids must be obtained from proteins in vegetable or animal food. Milk proteins contain all nine essential amino acid residues.

(iii) Digestion of Proteins

Food	Digestion Time (Approx. time in stomach before emptying into the intestine.)
(Very rough guide for comparative purposes only)	
Water	When stomach is empty, leaves immediately and goes into intestines.
Fruit & vegetable juices, vegetable broth	15 – 20 minutes
Fruits	20 – 40 minutes
Vegetables, raw salad type	30 – 40 minutes
Vegetables, cooked food type	30 – 40 minutes
Eggs	30 – 45 minutes
Fish	30 – 60 minutes
Grains, beans, nuts	1.5 – 3.5 hours
Milk & soft cheeses	1.5 – 2 hours
Poultry	1.5 – 2 hours
Red meats	3 – 6 hours

The human body does not use proteins in the original form we consume them (as food). Most proteins are broken down to their component parts during digestion. The components are then absorbed through the intestines and transported to cells where they are used to build (synthesize) new

proteins needed by the human body. The newly made proteins are released by the cells into the body fluids once the synthesis is complete.

Therefore, it is critical to consume proteins in forms that can be easily broken down into components during the digestion process. Humans cannot easily digest all proteins. Further, we suspect the digestion process will slow down with increase in a person's age making it incumbent to consume foods in a manner that aids digestion.

(iv) Solubility of Proteins

Some proteins can mix with water to make a solution while others cannot mix with water without some help. In the making of *paneer*, the addition of lemon juice (an acid) to whole milk causes the casein proteins to separate from the milk's water base leaving water-soluble proteins in the whey.

(v) Classification of Milk Proteins

The phenomenon described above enables us to classify milk proteins as caseins and whey proteins (enzymes are yet another group of milk proteins).

(a) Caseins

Casein together with milk fats separate as solids called curds when an acid or an enzyme called rennin/rennet is added to whole milk.

(b) Whey proteins

The remaining liquid, called whey contains the water-soluble substances: salts, sugars and soluble proteins. Like the proteins in eggs, whey proteins can be coagulated by heat.

(c) Enzymes

Catalysts (change agents) either stimulate or quicken a chemical reaction. Enzymes are catalysts for metabolism¹⁶ – a process by which the body breaks down or builds up compounds. Most enzymes are proteins and can be distinguished by the endings of their names.

Lipases are the main enzymes found in milk. They break down fats (lipids). When milk is agitated, the lipases can come in contact with milk fats causing them to degrade and making the milk rancid. This is particularly noticed with homogenized milk where the fat globules have been reduced in size to prevent them from rising to the top.

Proteases break down proteins. The predominant protease in milk is plasmin. While on the one hand protein break down caused by protease can lead to undesirable tastes, on the other hand the break down results in desirable tastes and textures during the 'ripening' of cheese.

¹⁶ Metabolic processes range from the digestion of food to the synthesis of DNA.

Heat deactivates most milk enzymes. Pasteurization deactivates lipases and a few other enzymes thereby increasing pasteurized milk’s shelf life. The deactivation of the enzyme alkaline phosphatase is used as an indicator that pasteurization of milk is complete.

The products of the enzyme breakdown of milk fats and proteins, though pre-digested and useful to the body, either smell or taste bad outside the digestive tract.

E. Milk Fats

(i) Composition of Milk Fats

On an average, 4% of milk consists of fat. Milk fat has one of the most complex fatty acid compositions of all edible fats. Helena Månsson in her paper ‘Fatty Acids in Bovine Milk Fat’ at the US National Library of Medicine notes that while milk fat has over 400 individual fatty acids residues, 15 to 20 of fatty acid residues make up 90% of milk fat.

Månsson also notes that “the composition of fatty acid [residues] in milk fat changes during a cow’s lactation cycle” and further, “Many factors are associated with the variations in the amount and fatty acid composition of bovine milk lipids... they may be feed-related factors, i.e. related to fiber and energy intake, dietary fats, and seasonal and regional effects.” As such, spring milk extolled in Zoroastrian literature likely has a different fat and nutrition content to that of milk drawn at other times of the year. Given the discovery of a multitude of remarkable health benefits associated with fats containing butyric acid residues (see next section) this may be significant.

(ii) Fat Digestion

In the digestive tract starting with the stomach, triglycerides (which make up most milk fats) are digested by the enzyme lipase. The digestion process breaks up the rather large triglyceride fat molecules into smaller components that can be absorbed through the intestine’s walls into the body.

Fats are digested more slowly than proteins or carbohydrates. The slower rate of digestion is nature’s way of maintaining an even amount of energy availability. Fats are a vital medium to long-term energy source.

Månsson continues to inform us that the digestion of milk fats starts by the action of enzymes secreted in the mouth (likely in the saliva that would increase with the chewing of say cheese over drinking milk). It continues in the stomach, where after the addition of gastric enzymes, 25-40% of the fats are digested. At this stage, the triglyceride in the milk fat globule core is partially digested. Digestion continues in first section of small intestine, the duodenum, where the enzyme lipase and bile acids complete the process initiated in the stomach. The digestion of large triglycerides is helped by bile acids that emulsify and expose the fat to the lipases.

Once the fatty acids and monoglycerides pass through the wall of the intestine, they are used to build a fresh set of triglyceride fats that are delivered to the body’s cells where they are broken down once again before being absorbed into the cell.

iii) Fats’ Ability or Inability to Mix with Water

Fats as oils do not normally mix with water. If a mixture of the two is left standing, the two will quickly separate – unless the fatty oil is helped to stay mixed in with the water. A mixture of oil or fat and water is called an emulsion.

Raw milk is an example of an emulsion of fat in water. In raw milk, the fats (also called lipids) are spread out in the milk’s water in the form of very tiny spheres or globules. The fat globules are coated with a thin skin of protein that keeps them apart from one another. If the fat spheres clump together, they will separate from the rest of the milk.

Raw milk is not a very stable emulsion. If milk is left standing still for some time, the fat spheres begin to clump together and the fat – being lighter than water – rises to the top of the milk as cream.



Milk & cream separation in raw milk.
Image credit: PlannedResilience.net.



3. Cream, Cheese & Clarified Butter

Zoroastrian tradition sees milk products such as cheese and clarified butter as foods for humans of all ages – as long as they are consumed frugally and judiciously. To this caveat we add: and provided a person’s body has not become intolerant of a particular milk product. In Iranian tradition, other than the limited use of milk in the making of *haoma* extracts, raw milk is seldom consumed.

When milk’s proteins, fats, carbohydrates (also called sugars) and other substances can no longer stay dispersed in milk’s water base, many milk components separate as solids. In doing so, they form products like cream, cheese and butter.

A. Cream

Cream contains fats (and some proteins) that are lighter than water. If raw milk is left to stand in a refrigerator for 24 to 48 hours, a layer of cream forms on the surface. The process can be accelerated by first boiling the milk for 3-5 minutes. When the cream is removed, the remaining milk, called skimmed milk, usually has only a small amount of fat left suspended in it.

B. Cheese – *Paneer/Panir*

Cheese consists of solidified milk components (mainly proteins and fats).

(i) Making *Paneer*. Curds

In a simple process, the addition of an acid such as lemon juice or vinegar to warmed milk, breaks down the ability of milk components such as proteins and fats to stay dispersed in water causing them to separate as solid pieces called curd. The remaining liquid is called whey. Milk curdles naturally in the human stomach because of digestive acids and enzymes.



Curds and whey. Image credit: Susan Waughtal.

(ii) Rennet/Rennin

A stomach enzyme found in some young animals called rennet or rennin also curdles milk (rennet can be extracted from plants as well). In the making of *topli nu paneer* (Gujarati for basket paneer – see below), the lining of chicken stomach (dry chicken gizzard) is added to the milk as a source of rennet. Strict vegetarians may wish to use vegetable rennet.

The advantage of using rennet is that there is less residual taste of lemon or vinegar in the cheese. We also read that using rennet results in a more firm cheese.

(iii) Whey



Strained curds in cheese cloth. Image credit: Jordana Living

Whey is the liquid that remains after the curd has coagulated. It consists of water and a few remaining water-soluble milk components such as milk carbohydrates (primarily lactose) and some proteins. Whey has its own nutrient value and is popular with athletes.

(iv) Using Cream, Yogurt, Whole or Skimmed Milk

If *paneer* is made from whole milk or just cream, it has a higher fat content. If cream is added, the *paneer* becomes ricotta-like. If the *paneer* is

made from skimmed milk, it has cottage cheese like higher protein content (since most of the fat was removed as cream).

Niloufer Ichaporia King in her *My Bombay Kitchen: Traditional and Modern Parsi Home Cooking* informs us that yogurt and cream can be added at the start to produce a tart, creamy *paneer*. Her recipe calls for 4 cups of milk and a mixture of a cup of yogurt, ½ a cup of heavy cream, and 2 teaspoons of salt. She first lets the yogurt stand at room temperature for a day to produce a more acidic *paneer*. She also brings the milk to a boil four times – removing the pan from the heat once the boiling milk has risen to the rim of the pot and then returning the milk to a boil. After the fifth boil, she adds the yogurt, cream and salt mixture with a vigorous whisk until the curds begin to separate. Since we did not see any acid or rennet in her recipe, we presume that the acid in the yogurt¹⁷ curdles the milk.

(v) Straining

The curds are strained in a sieve or over folded cheesecloth. The curds left in the sieve or cheesecloth are essentially cottage cheese. The making of *paneer* requires some of the remaining water to be squeezed out leaving a compact solid mass that can be cut with a knife.

¹⁷ Yogurt is made by bacteria fermenting milk lactose to produce lactic acid, which in turn acts on milk protein to give yogurt its texture and characteristic tang.



(vi) Squeezing out the Water

Water left in the curds can be squeezed out by twisting the top of the cheesecloth to make a ball beneath, and then leaving the twisted cheese cloth standing until the water stops dripping out. The result is a cheese ball similar to mozzarella in shape. The ball can be pressed flat. Alternatively, the cheesecloth can be placed on a flat sieve with a weight placed on top to press out the water and produce a slab of *paneer*.

(vii) Topli nu Paneer

If the cheesecloth or curds are placed and drained in a pot shaped basket of convenient size, the resulting *paneer* is called *topli nu paneer* in Gujarati, a tradition that was once very popular with Parsi & Irani Zoroastrians of India. Authentic *topli nu paneer* retains the indentations of the basket weave.



(viii) Lactose in Cheese

Depending on the way a cheese is made, it may contain little lactose carbohydrate (which remains dissolved in the whey). We read that harder, older cheeses have lower amounts of lactose.

(ix) Salt in Cheese

To increase *paneer's* shelf life and taste, salt can be added to the milk before it is curdled or the *paneer* can be stored in brine making it a type of feta cheese.



Making paneer. Image credit: FXcuisine.com

(x) Plain *Paneer*

Paneer that is intended to be eaten fresh often has no added salt. The resulting *paneer* absorbs the flavours of a savoury dish or it can be sweetened to make a dessert.

C. Butter & Buttermilk

Butter is an accumulation of milk fats. Butter is made by shaking or churning whole milk, cream or yogurt until the microscopic fat globules suspended in them break down and lose their protective protein coatings. In the process, the water in the milk, cream or yogurt further separates and is called buttermilk, a by-product like whey.

If milk was a water-in-oil emulsion, butter is an oil-in-water emulsion. Water makes up nearly 30% of traditional soft butters with the balance consisting mainly of milk fats.

The amount of protein left in butter is relatively low – about 1% by weight. If butter is made directly from milk, the milk’s protein is largely concentrated in the buttermilk.

The water, carbohydrates and proteins left in butter can be further removed by converting the butter to clarified butter.

D. Clarified Butter – *Roghan*

Clarified butter (*roghan*) consists of milk fats separated from milk proteins and carbohydrates (sugars). It is made by melting butter and skimming, decanting or otherwise separating the solids (mainly protein and some remaining sugars) from the liquid. Any water present in the butter evaporates during the process. The remaining fat is called clarified butter that is solid or liquid depending on the ambient temperature.

Clarified butter has a higher smoke point, about 252 °C, compared to regular butter’s smoke point of 163 to 190 °C, and a longer shelf life. It can be stored at room temperature like other cooking oils.

Making Clarified Butter



Skimming protein from melted butter.
Image credit: Anna Maria’s Open Kitchen.



Pouring/decanting the clarified butter.
Image credit: Anna Maria’s Open Kitchen.



Refrigerated/hardened clarified butter.
Image credit: macheesmo.com.

(i) Healing Properties of Clarified Butter

James Buckingham in his 1830 book *Travels in Assyria, Media and Persia*, writes that when an English ship was captured by Arabs, the Arabs punished its captain by cutting off his right arm and leaving him to bleed to death. The captain warmed a tub of clarified butter and dipped the stump of his arm in the oil thereby saving his life.

E. Clarified Butter – *Ghee*



Fresh ghee & butter on a banana leaf. Image credit: R. Shivaji Rao.

If during the making of clarified butter, the milk solids (proteins and sugars?) are heated to the extent that they brown and caramelize before being separated from the liquid fat, the clarified butter becomes *ghee*. The caramelized solids impart a somewhat nutty flavour to the ghee (before they are removed by straining while the *ghee* is a liquid).



4. Health Risks & Benefits

[The information included below and elsewhere in this monograph, is provided for informational purposes only. You should independently conduct research, or seek professional advice, before starting any dietary program.]

A. Milk Fats. Fact & Myth. Risks & Benefits

Milk and milk products such as cheese (*paneer*) and clarified butter (*roghan*) contain fats (lipids). Are these fats good or bad for humans when consumed? Should milk fats be consumed or avoided?

(i) Fat Facts

The word ‘fat’ has become prejudicial and we feel compelled to come to its rescue. Life and good health would not be possible if we did not have some fat or consume what are called ‘fats’.

In keeping with Zoroastrian philosophy, fats contain and contribute to the existential duality of nature. They can be beneficial or harmful. Existential duality compels us to make choices for which we are entirely responsible.

The fats present in milk have a nutritional purpose. Yet there can be harm when fats are consumed immoderately. Fats can make us look good or ugly. They can help us survive or they can be the cause of heart diseases and cancer leading to death. With a good understanding of the nature of fats, we can make informed choices.

While we may think of fats as something to avoid in our diet or to get rid of in our bodies, fats are one of the three main food groups we need to survive and stay healthy. Humans, animals and plants all use fat as a fuel. In plants, oils (fats) are mainly found in seeds where they provide energy until the seedlings are capable of using solar energy. For us humans, fats supply the energy our bodies need to function and to see us through times when food supplies are unpredictable – even helping us survive for several weeks without food, or at least until the next meal. In addition, fat has many other functions. Milk fats are carriers of certain essential vitamins. When we consume milk fats, we consume the associated vitamins as well.

Our bodies and brains will stop functioning if we have no fat.

On the negative side, certain kinds of fat or an excess of fat in an obese body can lead to health problems.

(ii) Harvard & National Inst. for Health. Study on Fats’ Risks

One of the largest and most expensive studies on whether normal fat consumption had negative health consequences was funded by the National

Heart, Lung and Blood Institute of the National Institute for Health. A large part of the research was conducted by Harvard University. The study cost \$415 million, likely over a billion dollars in today's money.

The randomized, controlled, primary prevention trial was conducted at 40 US clinical centers from 1993 to 2005 on 48,835 postmenopausal women, aged 50 to 79 years divided between a control group and those placed on a low-fat diet.

The study concluded that there were no evident health benefits for about 20,000 women (including women from different ethnic groups) on a low-fat diet. The study also found that these women had “virtually identical” heart, stroke and cancer (breast and colorectal) disease rates as did the 30,000 women who were not on the diet. After eight years, the women on the low fat/low calorie diet were also generally of the same weight as those women who were not on the diet.

However, other studies have shown that there is a relationship between red meat consumption and breast cancer. Further, the consumption of too many calories from fats and carbohydrates leading to excessive weight gain increases the risk of breast cancer, colon cancer, and heart disease.

As such, the study informs us that a moderate consumption of fat does not increase the risk of breast cancer, colon cancer, and heart disease. However, we also learn that an excessive intake of calories from fat and carbohydrate consumption leading to obesity increases the risk.

The Harvard School of Public Health reports, “It’s time to end the low-fat myth. For decades, a low-fat diet was touted as a way to lose weight and prevent or control heart disease and other chronic conditions, and food companies re-engineered products to be reduced-fat or fat-free, often compensating for differences in flavor and texture by increasing amounts of salt, sugar, or refined grains. However, as a nation, following a low-fat diet hasn’t helped us control weight or become healthier.” The myth nevertheless persists.

The fats in milk are essential foods for human beings when consumed temperately.

(iii) Benefits of Fats with Butyric Acid Residues

About 3% of milk fats are triglycerides containing butyric acid residues. The name butyric is related to butter. Esters and salts of butyric acid are called butyrates. Triglycerides with butyric acid residues are found in milk, cheese, butter and clarified butter, with clarified butter having the highest concentration.

Butyric acid is produced by the digestion of milk triglycerides containing butyric acid residues. Butyric acid is also produced in a healthy human intestine by beneficial bacteria acting on carbohydrates present in dietary fiber.

Butyric acid and butyrates have been found to contribute positively to general health and particularly to the health of the human digestive tract. The range of benefits is quite amazing and we will list only a few:

- They reduce colonization of the intestines by bad bacterial while promoting good bacteria. They also help strengthen the intestinal wall (while butyric acid does not smell particularly pleasant, rumour has it that its odour is what dogs seek to detect when sniffing other dogs during their socialization process – perhaps an indication of general health and a substitute for ‘how are you?’ and ‘I’m fine’ or otherwise);
- They aid colon health and are food for cells lining the colon without which the cells can die;
- They help inhibit intestinal inflammation, ulcerative colitis and colorectal cancer. They are also being investigated as possible treatments for parasitic and inflammatory diseases;
- Butyrates combat aging. Two butyrates, Sodium butyrate and trichostatin were found to increase the lifespan of experimental animals;
- Butyrates have for some time been used in psychiatry and neurology as mood stabilizers and anti-epileptics;
- Butyric acid inhibits absorption of fats by the small intestine into circulation.

B. Cheese/*Paneer*. Risks & Benefits

We have not yet found any studies related to spring cheese made from the milk of free-range cows in particular and *gospand* in general.

(i) Risks

Consuming any food in excess may have health risks especially when excessive consumption of high calorie foods leads to obesity. Cheese is high in calories.

BerkeleyWellness.com (University of California) states, “...cheese is high in calories (about 100 per ounce, on average) and fat (6 to 9 grams per ounce, most of which is saturated), and it often contains a



Cheeses. Image credit: BerkeleyWellness.com.

lot of sodium (100 to 300 milligrams an ounce). Still, small amounts can fit into most people’s diets.” [Calories, fat content (4-36%) and salt vary widely between different types of cheese.]

(ii) Benefits

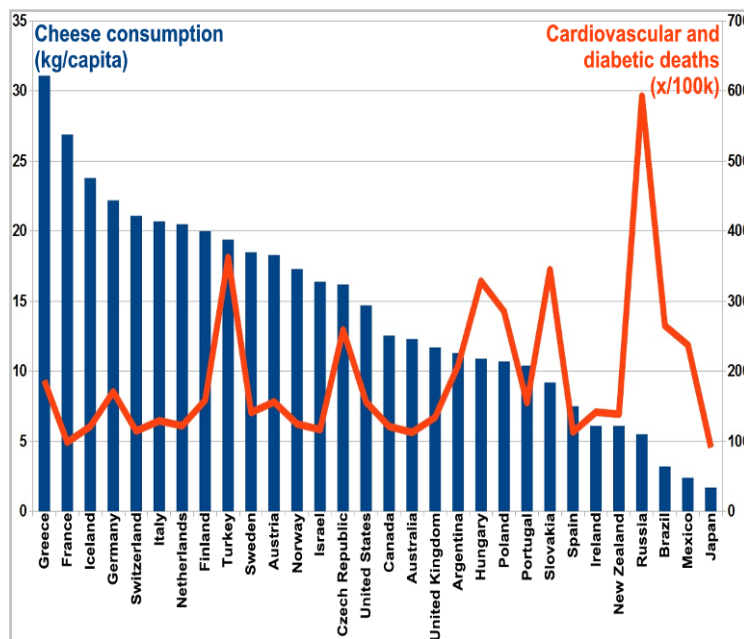
(a) Study: No Rise in LDL

MensHealth.com: “Cheese is the new wine.” “Danish scientists found that when men ate 10 daily 1-ounce servings of full-fat cheese for 3 weeks, their LDL (bad) cholesterol didn’t change.”



Image credit: BerkeleyWellness.com.

Wikipedia: “A review of the medical literature published in 2012 noted



that, ‘Based on results from numerous prospective observational studies and meta-analyses, most, but not all, have shown no association and in some cases an inverse relationship between the intake of milk fat containing dairy products and the risk of cardiovascular disease, coronary heart disease and stroke. A limited number of prospective cohort studies found no significant association between the intake of total full-fat dairy products and the risk of coronary heart disease or stroke.... Most clinical studies showed that full-fat natural cheese, a highly fermented product, significantly lowers LDL cholesterol compared with butter intake of equal

Average cheese consumption and rates of mortality due to cardiovascular disease or diabetes. There is no evident correlation between amount of cheese consumed and death rates due to heart problems and diabetes. Greece has the highest consumption and one of the lowest death rates. France with the next highest consumption and Japan with the lowest consumption had the lowest death rates. Image credit: Wikipedia.

total fat and saturated fat content.”

(b) Nutrient Content & Benefits

BerkeleyWellness.com: “...cheese provides calcium and protein, as well as some vitamin A, B12, riboflavin, zinc and phosphorus. It is a source of [small

amounts of] conjugated linoleic acid (CLA), a fat that may have anti-cancer, weight-reducing, and heart-protective effects.”

Mercola.com: “Cheese contains a synergistic blend of... vitamins K2 and D3 and calcium... powerful for protecting your bones, brain and heart.” “(According to) Dr. Kate Rheamue-Bleue, a Naturopathic Physician ...Vitamin K2 plays critical roles in protecting your heart, brain, and bones, as well as giving you some protection from cancer. ...K2 helps channel calcium into the proper areas of your body (bones and teeth) (and) prevents it from being deposited in areas where it shouldn’t, such as your arteries and soft tissues.”

(c) Dental Health

BerkeleyWellness.com: “Cheese may help prevent cavities. In a small study from Turkey in 2008, published in the journal *Caries*, people who ate cheese (just 1/3 ounce) after rinsing with a sugar solution had a rapid decrease in acidity, which lowers the risk of cavities. Older studies have found a similar protective acid-buffering effect.” The Pharmaceutical Journal, January 2000, published a similar result.

(d) Appetite Suppression. Help to Avoid Overeating?

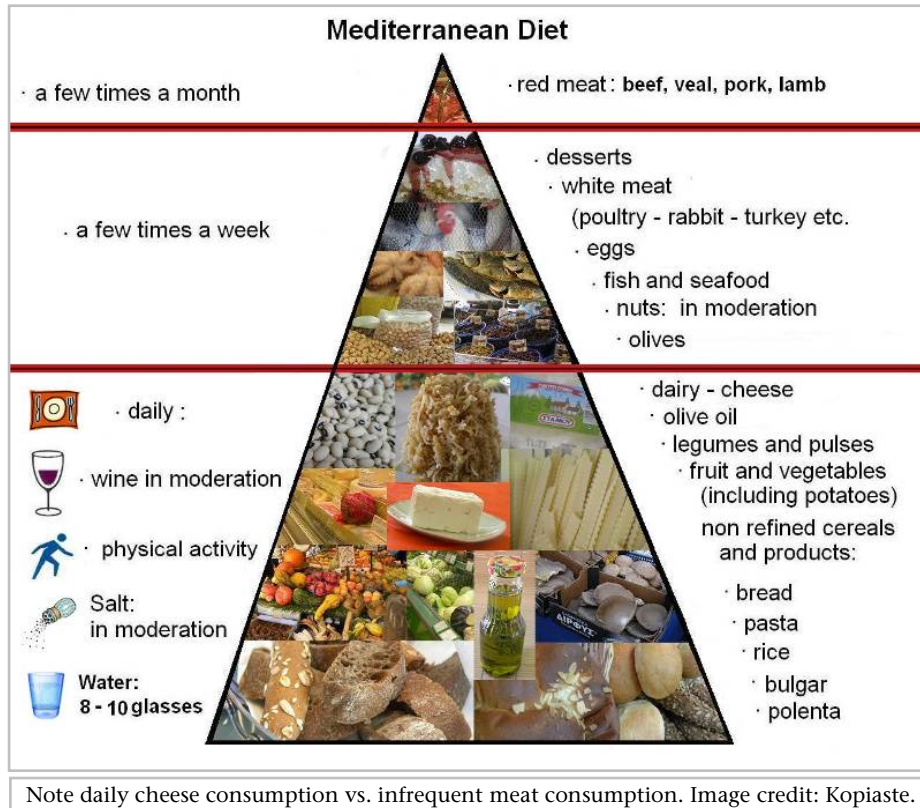
MensHealth.com: ““The combination of protein and fat in regular, full-fat cheese is very satiating,’ says Alan Aragon, a nutritionist in Westlake Village, California, and the *Men’s Health* Weight-Loss Coach. ‘As a result, eating full-fat cheese holds your appetite at bay for hours, and I’ve found that it cuts down my clients’ food intake at subsequent meals.” [Haoma (ephedra) plant extracts (that are part of the Zoroastrian Yasna ceremony) also reputedly have appetite suppression properties. The two in combination may effectively combat a tendency towards overeating or gluttony.]

(e) Cheese Improves Sleep & Reduces Stress

Wikipedia: “The majority of the two hundred people tested over a fortnight claimed beneficial results from consuming cheeses before going to bed, the cheese promoting good sleep (Sleep Study, 2005, Britain). Cheese contains tryptophan, an amino acid that has been found to relieve stress and induce sleep.”

C. Mediterranean Diet & Cheese

Cheese, butter and yogurt are regularly included in traditional Mediterranean and Iranian diets – in low to moderate quantities. Tara Parker-Pope in a February 11, 2009 *New York Times* article noted that in the 1960s, while the dietary traditions of the Greek island of Crete as well as those of southern Italy included dairy products, these regions had one of the lowest rates of chronic disease in the world and some of the highest adult life expectancy rates as well.



Parker-Pope continues, “The original work (a Mediterranean diet was good for you) that sparked scientific interest in Mediterranean eating habits came from researcher Ancel Keyes at the University of Minnesota. His landmark seven countries study focused on the link between eating habits along the Mediterranean and better health, despite inferior medical care in the region. Research on the diet took off in the 1990s, as scientists noted that people in Mediterranean countries lived longer and had low rates of serious disease despite high rates of smoking and drinking. Last year, the *British Medical Journal* published an extensive review of Mediterranean diet studies. It found that the eating plan is associated with significant health benefits, including lower rates of heart disease, cancer, Parkinson’s disease and Alzheimer’s.”

Our main interest in the Mediterranean diet was to find out whether or not dairy products such as cheese resulted in all the problems speculated upon in some North America health articles.

What we discovered was that in practice, moderate to low consumption of cheese and allied dairy products positively complemented traditional diets already low in meat and high in vegetables and fruit consumption.

There is every indication that the Zoroastrian tradition of consuming moderate amounts of cheese and clarified butter (*paneer* and *roghan*) can contribute to good health.



Image credit: BerkeleyWellness.com.

