

# The Calendar and the Time Account of the Turko-Tatars

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## Abstract

The relevance of the studied problem is caused by the fact that the identity of this or that nation is reflected first of all in its traditional culture which indissoluble areas are the calendar and the time account. Without studying this sphere of knowledge of national culture it is impossible to understand not only spiritual but also material, social life in the Turko-Tatar societies. The purpose of this article is the identification and the analysis of the facts of a calendar of the Turko-Tatars in close relationship with other areas of their spiritual culture. The leading method to the study of this problem is a complex method. The use of a complex method for us is not only a means of bringing in one research of diverse material as rather the principle of mutual validation and correlation of the facts and the objectivity of the conclusions. The main results of this article are detection of features and nature of the calendar of the Turko-Tatars, their role of public and spiritual life in interrelation with cultures of the Central Asian, the Muslim states. The article can be useful for historians, culturologists in research of culture, scientific knowledge, and socio-economic phenomena of the Turko-Tatars.

**Keywords:** calendar, metrology, system of the account, linear measures, units of measure, size

## 1. Introduction

### 1.1 Background

The nature of the Turko-Tatar calendar, chronology was determined by the needs of nomadic and later agricultural economy, cultural ties with other countries, religion and traditions.

Centuries-old life of the ancestors of the Tatar people (Huns/Huns, the ancient Turks, Khazars, Bulgars, Cumans, population of the Golden Horde, Kazan and other Tatar khanates) and their economic activities should have been reflected in their calendars. Needs of constant development of production and extensive trade and cultural ties have led to development of various methods of counting time.

### 1.2 Discussion and Status of a Problem

Folk knowledge is reflected in the researches of the ethnographer G.M. Khisamutdinov, who mentions the issues of the calendar of the Tatars in historical aspect. Based on indirect data, he notes the practice of a twelve-year animal cycle by the Bulgarians, as well as the Muslim lunar and zodiac calendars (Khisamutdinov, 1967). Although the facts presented by G.M. Khisamutdinov are later in time than the history of the Tatar spiritual culture, his materials can be used in the reconstruction of the ancient and medieval system of the time account (Khisamutdinov, 1967).

These questions are more profoundly taken up in the writings of the scientific mathematician V.M. Berkutov who collected and analyzed a large amount of material.

Based on the writings of Sh. Mardzhani and others, he notes the existence of different calendar systems of the Bulgarians. For the sake of justice it is necessary to indicate that insufficient critical analysis of the sources of the ancient period has led him to some unreasonable conclusions (Berkutov, 1987).

However the calendars and the time account of the Turko-Tatars have not yet become objects of special and complex research, as indissoluble areas of spiritual culture of the Turko-Tatars.

## 2. Materials and Methods

In this article, the ancestors of the Tatar people we conventionally call the Turko-Tatars. The term “Turko-Tatars” as the generic name of all Turkic people came into use in the XIX – early XX centuries. By this term we

conventionally mean the population of a vast territory during the period from the ancient Turkic time before the formation of the Volga (Kazan) Tatars.

## 2.1 Sources

### 2.1.1 Written Sources

When working with this theme we identified and used different types of sources: written, physical (archaeological), ethnographic, folklore, language, etc. Written sources are represented mainly by the works of the Arab and Persian authors, Chinese, Russian, Turko-Tatar compositions, literary works of authors of the Volga Bulgaria, the Golden Horde and the Kazan khanate.

### 2.1.2 Archaeological Materials

Important, sometimes the only, especially for the ancient periods of the archaeological sources are materials that allow not only to clarify information recorded in the written sources, but sometimes in new ways to reveal those or other phenomena of spiritual culture. A large amount of the archaeological material relating to the ancient Turkish, Bulgarian, Golden era and the period of the Kazan khanate was studied.

### 2.1.3 Ethnographic Data

Ethnographic data are essential to our study.

Ethnographic materials of Tatar and other nations which are in close ethnic and cultural ties with the Turko-Tatars testify to preservation of surprising parallels of ethnographic property. Careful examination of these parallel phenomena provides an opportunity to close the facts recorded in historical ethnography with archaeological data or written sources.

### 2.1.4 Linguistic Materials

To a certain extent the data of linguistics were also used. Etymological, semantic analysis of words, historical terms related to the field of ancient calendars and the system of the time account in some cases was possible to associate with certain periods of history.

## 2.2 Research Methods

A comprehensive study of different sources gives the chance to find the answers to the questions raised in this work. The use of the complex method for us is not only means of attraction in one research of diverse material, but also the principle of mutual check of reliability of the facts and objectivity of the received conclusions.

In addition to the basic method of analysis of the study there are involved the following:

- the comparative-historical method of examining the possibility of a greater number of involved materials, their representativeness with certainty in temporal, spatial and ethnic relations;
- historical and genetic analysis, which represents an excursus into the history of the Turko-Tatars and their ancestors or tribes, the people living in close contact with them;
- the interpolation method allowing to compare the phenomena of culture of those countries with whom the Turko-Tatars supported close economic, commercial and cultural ties with the local Finno-Ugric people and the countries of the East.

## 3. Results

### 3.1 The Calendar and the Time Account

#### 3.1.1 Ancient Roots

The ancient Turks conducted the chronology from “the creation of the world.”

The Great steppe also became a peculiar natural calendar: nomads possessed rich information about the nature of the steppes, animals that became for them the temporary benchmarks. In ancient Turkic runic monuments a month of summer (July) and a month when the deer jumps in the mountains (August) are recorded (Malov, 1959). Also “the live chronology” was practiced, when a lifetime of the well-known persons was taken as a temporary reference point (Malov, 1952).

Initially the annual calendar of the ancient Turks consisted only of ten months and their names coincided with ordinal numerals (Melioransky, 1899). The first month of the Turkic calendar coincided with the third month of the Chinese calendar. The first two months respectively were called “big and small months.” This ancient calendar was practiced among the Turkic people, including the Bulgarians and the Tatars, quite a long time.

The ancient Turks were familiar with the Manichean and the Babylonian, the ancient Syrian, the Nestorian

calendars.

### 3.1.2 The Old Turkic "Animal Cycle"

From the VIII century in the Turkic Kaganate the so-called Turko-Mongolian duodecimal animal calendar based on the Ancient Chinese began to be applied. Days and months on the "animal cycle" were called as the corresponding ordinal numerals. Besides, the ancient Turks calculation of days was conducted on the basis of the name and sequence of the animals that appear in the cycle (see: Old Turkic dictionary, 1969; Tikhomirov, M. N. (1946); Biruni, A. (1957). For example, the year of the Leopard, the fifth month of the year of the Chicken. Therefore, for the ancient Turks a cycle of 12 days was a certain period of time like a decade, week.

From the proto Bulgarian time and era of the ancient Turks Bulgarians inherited a calendar of "animal cycle" (see.: table 1). "Imennik of the Bulgarian princes" in which the names of ten years of a twelve-year animal cycle are recorded testifies the use of the account of years on the basis of this cycle by proto Bulgarians (Mikolla, 1916).

The duodecimal animal calendar subsequently practiced at the Khazar, proto Bulgarians, Danube and the Volga Bulgars, in the Golden Horde and the Kazan khanate and existed prior to the beginning of the XX century. A desire to bring the "animal cycle" to local conditions is observed at a number of the people. That can be seen at the Danube Bulgaria. The names of the years are replaced by names of the animals of local fauna (Tiger-Leopard, Dragon-Fish, Crocodile-Dragon, Monkey-Hedgehog, Pig- Elephant, the Mouse-Camel, etc.).

In the pre-Mongolian time among the Turkic-speaking people legends, signs associated with the appearance and existence of the 12-year "animal cycle" were widespread. The tribes and nations that used the twelve-year animal cycle attributed to each year specific features. Depending on the name of year they predicted productivity or hunger, wellbeing or misfortune.

In due time, generalizing these signs, A.N. Samoylovich wrote: "Signs of our written sources concern not so much stock-nomadic life which is typical for most of the ancient Turkish people, except the Uighurs and Kama Bulgarians, how many agricultural and settled culture with the cities and trade" (Samoylovich, 1927). A. N Samoylovich's conclusion quite corresponds to that way of life which was conducted by the people using this calendar.

Table 1. Comparative table of the names of the years of the Turko-Mongolian "animal calendar"

Ancient Turks	Biruni 1000 year	Kashgari 1073 year	«Imennik» 866 year	Tatar	Chuvash	Balkarokarachai	Mongol	Russian translation and differences
1.Syichkan	Sichkan	Syichgan	Somor	Tyichkan, Syichkan	Kushak kay	Chichhan	Hulgana	Myish the literal translation into English: Mouse
2. Уд Ud	Од Od	Уд Ud	Шегор, Сигор Shegor, Sigor	Сьер, Сыгыр Syier, Syigyir	Ёне Ёне	Ийнек Ijnek	Ухэр Ukhehr	Korova, <i>mong.</i> – Byik the literal translation into English: Cow, <i>mong.</i> – Bull
3. Bars	Bars	Bars	Ver	Bars Baryis	Pars	K'aplan	Bars	Bars, <i>balkaro.-karachai</i> .– Tigr, «Imennik» – Volk the literal translation into English: Bars, <i>balkaro.-karachay.</i> – Tiger "Imennik" – Wolf
4.Tavshan	Tushkan	Tavyiggan	Dvansh, Dovshon	Kuyan, Taushan	Mulkach	K'on	Tuulay	Zayats the literal translation into English: Hare

Ancient Turks	Biruni 1000 year	Kashgari 1073 year	«Imennik» 866 year	Tatar	Chuvash	Balkarokarachai	Mongol	Russian translation and differences
5. Лэу Leu	Luy	Nek		Azhdaha, Leu, Kelte	Arslan	Chabak'	Luu	Drakon <i>balkaro.-karachay.</i> –Ryiba, <i>M.Kashgari</i> –Krokodil the literal translation into English: Dragon <i>balkaro.-karachay.</i> –Fish, <i>M.Kashgari</i> –Crocodile
6. Elan	Iilan	Elan	Dilom, Dilan	Elan	Çè	Zhilan	Mogay	Zmeya the literal translation into English: Snake
7. Yund	Yunt	Yund	Moren	Elkyi	Ut	At	Morin	Loshad the literal translation into English: Horse
8. Koy	Kuy	Koy	Tekuchitem, Kuchin.	Kuy	Surah	K"oj	Honin	« <i>Imennik</i> » –Baran the literal translation into English: « <i>Imennik</i> »- Sheep
9. Bichin	Pichin	Bichin		Bichen, Maymyil, Kerpe	Pesin	Maymul	Mechin	Obezyana, <i>tatar.</i> –Ezh the literal translation into English: Monkey, <i>tatar.</i> – Hedgehog
10. Takyigu	Tagigu	Takagu	Toh, Tokol	Tavyik	Chah	K'ush, Tauuk	Tahla	Kuritsa, <i>balkaro.- karachay.</i> –Ptitsa the literal translation into English: Chicken, <i>balkaro.-karachay.</i> – Bird
11. It	It	Yit	Eth	Et	Yyita	It	Nohay	Sobaka the literal translation into English: Dog
12. Tonuz	Tunguz	Tonuz	Doks	Dungyiz	Syisna	Tonguz	Gahai	Svinya the literal translation into English: Pig

The table is compiled according to: Abureyhan Biruni (1957), Mahmud Kashgari (1960), I. I. Mikolla (1916), "the Ancient Turkic dictionary" (1969), A. N. Samoylovich (1927), O. L. Opryshko (1967), V. D. Dimitriev (1982) and others.

### 3.1.3 Bulgarian-Khazar Calendars

The original calendar was common for the Khazar-Bulgarians. It was based on the division of the year into four equal parts. According to V.E. Flerova (Flerova, 1997), one of such chronology was built on the principle of contrasting light and darkness and equal, more often fourfold, division of the year. It is reflected in the bronze rings divided by the heads of cyclic animals into four parts. In the most of amulets the heads are turned to the right, i.e. move in the direction of the movement of the sun. There are also the heads turned to the opposite side.

They represent the movement of the "night sun". Its reflection we see on the ring amulets which are found in later works (in the XIII-XVI centuries in the Kamayevsky settlement of Tatarstan).

Round metal plates in which animals of a twelve-year cycle are represented on bronze circles — mirrors going in a consecutive order one after another can be met. The images symbolize the idea of infinity of time, having neither beginning nor end. On the Bulgarian subjects with the years of the twelve-year cycle, images of certain animals are observed (dog, leopard, dragon, hare, sheep, chicken, mouse). The latter, obviously, were worn by people born in the respective year. They believed in their patronage and protect power.

The above-described systems of chronology infiltrated the Bulgarians from outside, or were inherited from their predecessors. The Bulgarians, obviously, had their own national calendars, partially they remained at the Tatars and the people, next to them (see tab.). The name "bilekaye" — "fifth month" (bial/bish) in the table indicates that the Bulgarians, like the ancient Turkic people and the proto Bulgarians (Mikolla, 1916), once had a calendar based on ordinal numerals.

There is evidence that the Bulgarians had other types of calendar. Together with the penetration of Islam the Muslim lunar calendar – lunar Hejira began to spread among the Bulgarians. It became in the Volga Bulgaria one of the attributes of the Muslim religion and the official calendar.

Under the title "Persian notation" ("farsiyahisaby") one of the Iranian calendars means. In the Bulgarian times till 1079 in the East the Iranian calendar on an era of Yezdegerd was used. Then with the assistance of the outstanding Persian mathematician, astronomer, poet and philosopher Omar Khayyam (1040-1143) it was reformed. The chronology on this calendar was adopted in the state of Seljuk and therefore has been called the era of Jalal al-Din on behalf of the sovereign of the dynasty of Seljuk, or Seljuk, Sultan ("tarihiSoltani") era (Katanov N. F., 1920).

As the indirect indicator of the use of the Iranian calendar in the Volga Bulgaria is the fact that in the past the New Year's month was called in Persian: "Newroz"(new day) by the people of the Middle Volga region (see table 2).

Table 2. Comparative table of month names calendar of the people of the Middle Volga region

<b>Tatar</b>	<b>Chuvash</b>	<b>Mari</b>	<b>Translation into Russian</b>
1. Neuruz	Nuras (Naras), Nurs (Nars)	Neuruz	from Persian–«novyy den»; «mesyats novogo goda, dnya» the literal translation into English: "new day"; "the month of the new year, day"
2. Bush	Pusha (Posha)	Pozh	svobodnyy mesyats the literal translation into English: free month
3. Saban	Aka	Aga	mesyats pashni, sohi, pluga the literal translation into English: the month of arable land, the plow, plough
4. zhey	Su		mesyats leta the literal translation into English: summer month
5. Bilek, Chertmĭ	Sertme		pyatyiy parovoy mesyats the literal translation into English: the fifth steam month
6. Pechĭn	Uta	Uta	mesyats sena, senokosa the literal translation into English: the month of hay, haymaking
7. Urak	Surla	Ursho-sorla	mesyats serpa, zhatvyi the literal translation into English: the month of the sickle, harvest

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8.	Yindyir, Yeten, Avan ashlyiksugu	mesyats toka, molotbyi, ovinnyiy mesyats the literal translation into English: the current month, threshing, Ovinny month
9.	Келһъ Yupa	mesyats moleniya, stolba the literal translation from Russian into English: the month of prayer, pillar
10.	Chek Chuk	mesyats zhertvoprinosheniya the literal translation into English: the month of sacrifice
11.	Rashtau, Rashtav Rashtua	mesyats rozhdestva the literal translation into English: the month of Christmas
12.	Agam (olyi) Karlach, Mankarlach kyirlach	mesyats bolshih holodov the literal translation into English: the month of big cold weather
13.	Enem (keche) Kechenkarlach kyirlach	mesyats malyih holodov the literal translation into English: the month of small cold weather

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The table is compiled according to: "The Tatars of the Middle Volga region and Cisurals" (1967), «Tatar telenen dialektologik suzlege» (1969), R. G. Ahmetyanov (1981), V. M. Berkutov (1987), F. S. Bayazitova (1986), V. D. Dimitriev (1982) and others.

The "Hamal notation" means "solar Hijri" – the zodiac calendar (year consisted of months, which were the names of the constellations of the Zodiac), which existed from the XI century. This calendar was based on the visible motion of the sun on the ecliptic. Within 12 months the sun passes through 12 constellations. The first month of this calendar was called the chronology (the month of Aries coincides with March). The folklore materials of the Kazan Tatars show that this calendar system was popular among the rural population because it, noting the time of the solar year, quite accurately regulated the order of the agricultural work. The Tatar national proverbs and signs testify to it.

Thus, the Volga Bulgars recorded the following chronology: 1) the Turko-Mongolian on the basis of the twelve-year animal cycle, 2) actually the Bulgar luni-solar calendar, 3) the Muslim zodiac "solar Hijri", 4) the Muslim lunar Hijri, 5) the Iranian solar calendar. The Bulgarian scientists were familiar with other calendars. Calendars were in close relation with other areas of spiritual culture (folklore, signs, myths, etc.).

#### 4. Conclusion

Review of calendars for a long historical time allowed to come to the conclusion that they are virtually without change could have survived for very long. Particularly systems of time account proved to be stable, which appeared in the period of the Turkic Kaganate, though certain changes corresponding to the conditions and requirements of the time are observed.

In the Turko-Tatar societies calendars served not only as a "tool" of chronology, and closely intertwined with other areas of spiritual culture (astronomical and mathematical knowledge, folk signs, folklore, myths, etc.).

Close ties with other countries led to the penetration and assimilation of calendars of other nations (China, Iran, Central Asia, the Caucasus, the Muslim countries, to some extent the Byzantine Empire, Ancient Rus), but they were adapted to local conditions.

#### 5. Recommendations

The article can be useful for a comprehensive, systematic study of the spiritual culture of the Turkic-Tatars. They can deeper reveal their economic and social life.

Observations of the movement of the sun, the moon, stars and planets led to the creation of astronomical

calendars. It was this time theoretical generalization of observation of nature, celestial objects. Therefore, they contribute to a more complete disclosure of the status of mathematical and astronomical knowledge.

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