

RELIGIONS AND THE SEVEN-DAY WEEK

BORIS ROSENFELD*

Pennsylvania State University, USA

RESUMEN

Se considera la historia de la semana de siete días y de los nombres de los días de la semana en varios pueblos. Se investiga el papel de la Biblia en la creación de la semana de siete días, la aparición de los nombres numéricos de los días de la semana entre los judíos, los sirios, los árabes y otros pueblos cristianos y musulmanes, y la difusión de estos nombres entre los pueblos de Europa, Asia y Africa.

ABSTRACT

The history of the seven-day week and of names of the days of the week of various peoples is considered. The role of Bible in the creation of the seven-day week, the appearance of numerical names of the days of the week of Jews, Syrians, Arabs, and other Christian and Muslim peoples, and the spreading of these names among peoples of Europe, Asia, and Africa are investigated.

* Author would like to thank Prof. Abhay Ashtekar and Prof. Augustin Banyaga (State College, Pennsylvania), Prof. Razaulla Ansari (Aligarh, India), Prof. Jelena Gill (East Lansing, Michigan), Prof. Sigurdur Helgason (Cambridge, Massachusetts), Prof. George Saliba (New York), and Prof. Julio Samsó (Barcelona) for delivery of the names of the week in Marathi, Kirwanda, Urdu, Irish and Gaelic, Icelandic, Syriac, and Catalan respectively, Dr. Gennady Kurtik and Dr. Alexander Rylov (Moscow) for delivery of the names of the week of many peoples of the former USSR, and Dr. Alexandra Aikhenvald (Florianopolis, Brazil), Prof. Anthony Cutler (State College, Pennsylvania) and Raymond E. White (Tucson, Arizona) for their very useful advice.

Se investiga también el papel de las antiguas religiones babilónicas, de la Grecia antigua y del mitraísmo en la aparición de los nombres planetarios de los días de la semana de romanos e indios, el papel de la antigua religión germánica y de la cristiandad en la creación de los nombres de los días de la semana de los pueblos europeos y el papel del budismo y la filosofía china en la creación de los días de la semana de los pueblos asiáticos.

The role of Babylonian and ancient Greek religions and Mithraism in the appearance of planetary names of the days of the week of Romans and Indians, the role of ancient Germanic religion and Christianity in the creation of the names of the days of the week of the peoples of Europe, the role of Buddhism and Chinese philosophy in the creation of the days of the week of the peoples of Asia are investigated.

Palabras clave: Calendarios, Cronologías.

1. The Bible and the Appearance of the Seven-Day Week

The seven-day week appeared in the Bible book *Genesis* in the account on the creation of the world in six days and was at first used by ancient Jews. The Hebrew name of the rest day *Sabbath* came from Babylonian name of the rest day *sabbatum* (Babylonians, like ancient Romans, used 7-8-day week determined by Lunar phases).

The *Hebrew* names of the days of the week are numerical: Sunday -*Yom rishon*- "first day", Monday -*Yom shani*- "second day", Tuesday -*Yom shlishi*- "third day", Wednesday -*Yom reve^ci*- "fourth day", Thursday -*Yom khamshi*- "fifth day", Friday -*Yom shishi*- "sixth day" and ^c*Erev shabbat* -"eve of Sabbath", Saturday -*Yom ha-shabbat*- "day of Sabbath".

2. The Days of the Week of the Eastern Christian Peoples

From Hebrew names of days of the week came the names of these days in the languages of the Eastern Christian peoples -the *Syriac*, *Greek*, *Georgian* and *Armenian* names.

The *Syriac* names are: *Had-bshabā*, *Trein-bshabā*, *Tlāt-bshabā*, *Arba^c-bshabā*, *Hamesh-bshabā*, ^c*Rūbtā*, *Shabtā*. First five of these names are connections of the numerals 1, 2, 3, 4, 5 with the shortened name of Saturday and mean "first day after Saturday" and so on, the name of Friday means

"preparation", since this day was the day of preparation to Saturday when any work was prohibited.

The *Greek* names are: *Kyriakē*, *Deutera*, *Tritē*, *Tetartē*, *Pemptē*, *Paraskeuē*, *Sabbato*. The name of Sunday means "day of the Lord", the names of 2th-5th days mean "second", "third", "fourth", and "fifth", the name of Friday means "preparation" and is the translation of the Syriac name, the name of Saturday comes from *Sabbath*. In some Byzantine documents Sunday is called *Prōtē* - "first", and Saturday is called *Hebdomē* - "seventh" ([6], p. 166). There was also the third name of Sunday *Apraktos hēmera* - "day when people do not work".

Among the *Georgian* names *Kvira*, *Orshabat'i*, *Samshabat'i*, *Otkhshabat'i*, *Khutshabat'i*, *Paraskevi*, *Shabat'i*, and among *Armenian* names *Kiraki*, *Erkushapt'i*, *Erek'shapt'i*, *Chorek'shapt'i*, *Hink'shapt'i*, *Urpat'*, *Shapat'* the names of Sunday are the versions of the Greek name, the names of 2th-5th days are, like in Syriac, connections of the numerals 2, 3, 4, 5 with the name of Saturday, the names of Friday are versions of the Greek and Syriac names, the names of Saturday come from *Sabbath*.

3. The days of the week of the Islamic Peoples

From Hebrew names came also pre-Islamic *Arabic* names *Yaum al-aḥad*, *Yaum al-ithnayn*, *Yaum al-thalāthā*, *Yaum al-arba^cā*, *Yaum al-khamīs*, *Yaum al-^carūba*, *Yaum al-sabt*. After the appearance of Islam Arabs replaced the name *Yaum al-^carūba* by *Yaum al-jum^ca* - "day of meeting" (for prayers).

Analogous to the Syriac names are the *Persian* names *Yakshanba*, *Dūshanba*, *Seshanba*, *Chārshanba*, *Panjshanba*, *Jum^ca*, *Shanba* (the Persian name of Friday is taken from Islamic Arabs).

The names of days of the week of many Muslim nations come from the Persian names: the *Uzbeki* and *Tajiki* names coincide with Persian names, the versions of these names are the *Qazaq* (Kazakh) names *Jeksembi*, *Düysembi*, *Seyssembi*, *Särsämbi*, *Beysembi*, *Juma*, *Sembi*, the *Qyrghyz* (Kirgiz) names *Jekshembi*, *Düyshömbü*, *Sheyshembi*, *Shershembi*, *Beyshembi*, *Juma*, *Ishenbi*, the *Turkmen* names *Yekshenbe*, *Dūshenbe*, *Sishenbe*, *Chārshenbe*, *Pershenbe*, *Anna*, *Shenbe*, the *Tatar* names *Yäkshämbe*, *Düshämbe*, *Sishämbe*, *Chärshämbe*, *Pänjeshämbe*, *Jomgha*, *Shimbä*, and the *Bashqort* (Bashkir) names *Yäkshämbe*, *Düshämbe*, *Shishämbe*, *Sharshamby*, *Kesadhna*, *Yoma*, *Shämbe* (the Turkmen name of Friday and the Bashqort name of Thursday are old Turkic names). The versions of the Persian names are also

some Azerbaijani and Turkish names: the Azerbaijani names are *Bazar* ("bazaar"), *Bazar ertəsi* ("day after Sunday"), *Chärshänbä akshamy* ("eve of Wednesday"), *Chärshänbä, Jümä akhsamy* ("eve of Friday"), *Jümä, Shänbä*, near to these names are Turkish names *Pazar, Pazartesi, Sali* (perhaps, the shortening of *Şeşembe*), *Çarşamba, Perşembe, Cuma, Cumartesi*.

4. The names of the days of the week borrowed from Arabs

Among the *Portuguese* names the first and seventh names *Domingo* ("day of the Lord") and *Sabado* (from Sabbath) are borrowed from Spanish, the other names *Segunda feira, Terça feira, Quarta feira, Quinta feira, Sexta feira*, which are connections of the word *feira* - "bazaar" or "free day" - with the numerals "2nd", "3rd", ..., "6th", are borrowed from Arabs.

From Arabic come the names of days of the week of many peoples of *Daghestan*. In this Northern Caucasian Muslim republic there are many peoples, and before the Russian conquest Arabic was the language of intercourse of these peoples. In particular, the versions of Arabic names are *Avar* names: *hyat'an qo, ini qo, talat qo, arbagh qo, khamiz qo, ruzman qo, shamat qo, Lezghin* names: *hyad yugh and bazardin yugh, islen yugh, salasa yugh, arbe yugh, khemis yugh, jümä yugh, kish yugh*, and *Qumyq* names: *qatty gün, itni gün, talat gün, arba gün, khamis gün, juma gün, songu gün* (the words *qo, yugh, and gün* mean "day", *ruzman* - "holiday", *kish* and *songu* - "last").

The names of days of the week of many peoples of Africa and Asia which obtained the 7-day week from Arab mercants also come from the Arabic names: the versions of these names are the *Hausa* (Western Africa) names *Lahädi, Litinin, Tälätä, Läräbä, Alhämîs, Jumma'ä, Asabär* (the letter *l* in the beginning of some of these names comes from Arabic article *al-*), the *Malagasy* (Madagascar) names *Alahady, Alatsinainy, Talata, Alarobia, Alakamisy, Zoma, Asabothy* (the letters *al* in the beginning of some these names also come from *al-*), and the *Indonesian* names *hari Ahad, hari Senin, hari Selase, hari Rabu, hari Kamis, hari Jum'at, hari Sabtu*.

Among the *Swahili* (Eastern Africa) names *Jumapili, Jumatatu, Jumanne, Jumatano, Alhamisi, Ijumaa, Jumamosi* only the names of Thursday and Friday come from Arabic names, other names are formed analogously from the name of *Friday* and numerals *mosi* = 1, *mbili* = 2, *tatu* = 3, *nne* = 4, *tano* = 5.

Among Vietnamese names *Chù, nhậ, Thù' hai, Thù' ba, Thù' tu', Thù' nãm, Thù' sau, Thù' bay* the first name means "day of the Sun" or "day of the God", other names mean "2nd day", "3rd day", ..., "7th day".

5. The Days of the Week of the Eastern European Peoples

Besides numerical names of days of the week whose first day is Sunday (Biblical, Eastern Christian, and Muslim names) or Friday (Swahili names) there are also the numerical names whose first day is Monday -these names are used by *Slavic* and *Baltic* nations. The *Russian* names are *Voskrense'ye* (literally "resurrection" (of Christ) instead old *Nedelya* -"not working", the translation of Greek *Apraktos hēmera*; now this word means in Russian "week"), *Ponedel'nik* ("day after *Nedelya*"), *Vtornik* (from *vtoroy* -"second"), *Sreda* (from *srednii* - "middle"), *Chetverg* (from *chetvertyi* - "fourth"), *Pyatnitsa* (from *pyaty* - "fifth"), *Subbota* (from *Sabbath*). Analogous are the *Ukrainian* names *Nedilya, Ponedilok, Vivtorok, Sereda, Chetver, P'yatnytsya, Subota*, the *Belorussian* names *Nyadzyela, Ponadzyelak, Awtorak, Sereda, Chats'ver, Pyatnitsa, Subota*, the *Polish* names *Niedziela, Poniedziałek, Wtorek, Środa, Czwartek, Piątek, Sobota*, the *Czech* names *Nedelě, Pondělí, Uterý, Streda, Čtvrtek, Pátek, Sobota*, the *Bulgarian* names *Nedelya, Ponedelnik, Vtornik, Sryada, Chetv'r-t'k, Pet'k, S'bbota*, the *Serbian* and *Croatian* names *Nedelja, Ponedeljak, Utorak, Sreda, Četvrtak, Petak, Subota*.

The *Lettonian* names are *Svētdiena, Pirmdiena, Otrdiena, Tresdiena, Ceturtdiena, Piektiena, Sestdiena*, the first of which means "day of Holiday", the other ones mean "1st day", "2nd day", ..., "6th day". The *Lithuanian* names are *Sekmądienis, Pirmadienis, Antradienis, Trečiadienis, Keturiadienis, Penkiatdiena, Šeštadienis*, which mean "7th day", "1st day", "2nd day", ..., "6th day" respectively. The *Estonian* names are *Pühapäev* ("the holy day"), *Esmaspäev* ("1st day"), *Teisipäev* ("the other day"), *Kolmapäev* ("3rd day") or *Keskñadal* ("the middle of the week"), *Neljapäev* ("4rd day"), *Reede* (from Danish *Fredag*), *Laupäev* (from Danish *Lördag*).

The *Hungarian* names are *Vasárnap, Hétfő, Kedd, Szerda, Csütörtök, Péntek, Szombat*, the first from these names comes from Turkish *Pazar* (*nap* means "day"), the second and third names mean "head of the week" and "second", the last four names are versions of Slavic names.

These names are used also by some nations of the Northern Caucasus. The names of *Ossetes*, the descendants of *Scythians*, are *Hu'yisaubon* ("day of the God"), *Qu'yrisär* ("head of the week"), *Dytztzäg* ("second"), *Ärtytztzäg* ("third"), *Tzyppäräm* ("fourth"), *Mayrämbon* ("day of holiday"), *Sabat* (from *Shabbath*).

The *Chechen* names are *K'ira*, *Orshot* (from Georgian *Kvira* and *Orshabat'i*), *Shinara* (from *shi*" = 2), *Khaara* (from *kho* = 3), *Yieara* (from *di*" = 4), *P'eraska*, *Shot* (from Georgian *Paraskevi* and *Shabat'i*). The *Ingush* names are close to Chechen ones.

The *Abkhaz* and *Abaza* names are *Mcheysha* and *Mtshasha* respectively ("day of the Lord"), *Shvakhya* ("1st day"), *Ūasha* and *Ghvasha* respectively ("2nd day"), *Khasha* ("3rd day"), *Pshchasha* ("4th day"), *Khuasha* ("5th day"), *Sabsha* (from *Shabbath*).

6. Chinese and Other Asian and African Names of the Days of the Week Similar to the Slavic Ones

In Asia the names of the days of the week similar to the Slavic ones are used by Chinese, by Mongols, and by kindred to Mongols Buryats. The *Chinese* name *Hsing ch'i jih* of Sunday contains the word *jih* - "Sun", but the Chinese names *Hsing ch'i i*, *Hsing ch'i erh*, *Hsing ch'i san*, *Hsing ch'i szu*, *Hsing ch'i wu*, *Hsing ch'i liu* of other days contain the numerals 1, 2, ..., 6.

One of three kinds names of *Mongol* days are *Sayn ödör* ("Holiday") and *Naran ödör* (day of the Sun), *Negdekh ödör*, *Khoyordokh ödör*, *Guravdakh ödör*, *Dörövdökh ödör*, *Tavdakh ödör* ("1st day", "2nd day", ..., "5th day"), *Khagas sayn ödör* ("eve of Sunday"). The *Buryat* names of days are *Voskreseni* (the version of the Russian *Voskresen'ye*), and *Garagan doloön*, *Garagan negen*, *Garagan khoyor*, *Garagan gurban*, *Garagan dürben*, *Garagan taban*, *Garagan zurgaän*, ("7th day", "1st day", "2nd day", ..., "6th day").

In Africa the analogous names are used by some nations of Southern and Central Africa. Among the *Zulu* names *Sonto*, *Msombulukwe*, *Wesibili*, *Wesithathu*, *Wesine*, *Wesihlanu*, *Mgibelo* the first name is the version of the Duth *Zondag* and the 3rd, 4th, 5th, and 6th names contain the numerals 2, 3, 4, 5 respectively. The *Rwanda* names *Kucyumweru*, *Kuwanbera*, *Kuwakabiri*, *Kuwagatatu*, *Kuwakana*, *Kuwagatanu*, *Kuwagatandatu* have the same meanings as above mentioned Mongol names.

7. Old Turkic and Circassian Names of the Days of the Week

The old Turkic names of days of the week are kept in the language of *Karaims* and *Chuvashs*, whose languages are Turkic but who are not Muslims (*Karaims* are Judaists, *Chuvashs* are Christians). The names of days of *Karaims* living in the Crimea are: *Yukh kun* ("the day of the week"), *Yukh*

bash kun ("the first day of the week"), *Orta kun* ("the middle day"), *Khan kun* ("the day of the king"), *Kicheyne kun* ("eve of Friday", cf. the Bashqort name), *Eyne kun* (cf. the Turkmen name), *Shabbat kun* ("the day of Sabbath"). The names of days of Karaims living in Lithuania are: *Yekh kün'*, *Yekh bash kün'*, *Orta kün'*, *Khan kün'*, *Kichibaraski* ("eve of Friday"), *Baraski* (from Greek *Paraskeuē*) and *Anna kün'*, *Shabbat kün'*.

The *Chuvash* names are *Vyrsarni kun*, *Tunti kun*, *Ytlari kun*, *Yun kun*, *Kesnerni kun*, *Erne kun*, *Shamat kun*, three last names are close to the Bashqort, Turkmen, and Karaim names of these days.

Although *Balqars* and *Karachays* are Muslims, their names of the days of the week *Yiykh kün*, *Bash Kün*, *Gürge kün*, *Baras kün*, *Orta kün*, *Bairym kün*, *Shabat kün* are also close to old Turkic names (the name of Friday, the Muslim rest day, means "holiday").

The *Circassian* (*Adygh*) peoples are *Adygeyans*, actually Circasians -*Cherkeses*- and *Kabardians*. These peoples at first were Christians but later became Muslims. *Adygeyan* names of the days of the week are *Tkhyaumaf* ("day of the Lord"), *Blype* ("beginning of the week), *Ghubj* ("the middle"), *Bereskezhy* ("little Friday", *Mefeku* ('the day of the king, from Georgian *mephe* - "king"), *Bereskeshkhu* (from Georgian *Paraskevi*), *Shembet* (from Sabbath), the names of Monday, Tuesday, and Thursday are translations of old Turkic names. *Cherkes* and *Kabardian* names are *Tkhamakho*, *Blyshkhe*, *Ghubzh*, *Berezh'ye*, *Mekhoku*, *Merem*, *Shebet*; the name of Friday means "holiday", other names have the same meanings, as *Adygeyan* ones.

8. The Days of the Week of the Western European Peoples

Besides the numerical names of the days of the week many nations of Europe and Asia have the names of days of the week which are connected with names of planets. These names appeared at first in ancient Rome and in India. The *Roman* names are *Solis dies*, *Lunae dies*, *Martis dies*, *Mercurii dies*, *Jovis dies*, *Veneris dies*, *Saturni dies*. In Christian Rome the names of Sunday and Saturday were replaced by *Domini dies* ("day of the Lord") and *Sabbati dies* respectively.

From the *Christian Roman* names come the *Spanish* names *Domingo*, *Lunes*, *Martes*, *Miércoles*, *Jueves*, *Viernes*, *Sábado*, the *Italian* names *Domenica*, *Lunedì*, *Martedì*, *Mercoledì*, *Giovedì*, *Venerdì*, *Sabato*, the *French* names *Dimanche*, *Lundi*, *Mardi*, *Mercredi*, *Jeudi*, *Vendredi*, *Samedi* (earlier *Sabedi*), the *Rumanian* and *Moldovan* names *Duminică*, *Luni*, *Marți*, *Mercuri*, *Joi*, *Vineri*, *Sâmbătă*.

From the *heathen Roman* names come the *English* names *Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday*, the *German* names *Sonntag, Montag, Dienstag, Mittwoch, Donnerstag, Freitag, Sonnabend* and *Samstag*, the *Dutch* names *Zondag, Maandag, Dinsdag, Woensdag, Donderdag, Vrijdag, Zaterdag*, the *Swedish* and *Danish* names *Söndag, Mandag, Tisdag* and *Tirsdag, Onsdag, Torsdag, Fredag, Lördag*, the *Icelandic* names *Sunnudagr, Manadagr, Tyradagr, Odhinadagr, Thorsdagr, Frjadagr, Laugardagr*. In the names of Germanic peoples the names of Roman Gods *Mars, Mercury, Jupiter* (Jovis-Pater), and *Venus* are replaced by the names of corresponding Germanic gods *Tir* (or *Tiw, Zio*), the god of war, *Wodan* (or *Odin, Wotan*), later the chief god, but originally the god of the winds, *Thor* (or *Donar*), the god of thunder, and *Freiya*, the goddess of love. The German name of Wednesday means "the middle of the week", this name replaced the old German name *Wotanstag*, the first German name of Saturday means "eve of Sunday", the second one, as French *Samedi* came from *Sabbath*, the Scandinavian names of Saturday mean "the day of bath".

Among the *Finnish* names *Sunnuntai, Maanantai, Tiistai, Keskiviikko, Torstai, Perjantai, Lauantai* the first three and last three names are veraions of Swedish names, the fourth one is the translation of the German name.

The names of the days od the week of *Celtic* nations also come from the Roman names: the *Welsh* names *diw Sul, diw Llun, diw Mawrth, diw Merdhyr, diw Iew, diw Gwener, diw Sadwrn* come from the heathen Roman names. Among the *Irish* and *Gaelic* names *Dé Domhnaigh, Dé Luain, Dé Máirt, Dé Ceadaoin, Déardaoin, Dé hAoine, Dé Sathairn* the first name comes from the Christian Roman name, the 7th one comes from the heathen Roman name, the 2nd and 3rd names also come from the Roman names. Very near to Celtic names are *Catalan* names *Diumenge, Dilluns, Dimarts, Dimecres, Dijous, Divendres, Dissabte* which come from the Christian Roman names, and the *Albanian* names *Dielë, Hënë, Martë, Merkurë, Entjë, Prëmë, Shtunë* which come from the heathen Roman names (the first two Albanian names mean "the Sun" and "the Moon" respectively).

9. Indian Names of the Days of the Week

The *Indian* names of the days of the week, both classical *Sanskrit* and modern *Hindi*, are *Aditya vara, Soma vara, Mangala vara, Budha vara, Brihaspati vara, Shukra vara, Shanayshchara vara*, these names have the same meanings as the heathen Roman names.

The names of days of the week of different nations of India are analogous to these names. The *Marathi* names are *Ravi-war, Soma-war, Mangal-war,*

Budh-war, Guru-war, Shukra-war, Shani-war (*Rawi* and *Guru* are other Sanskrit names of the Sun and Jupiter). The *Urdu* names are *Itwar, Pīr* (the Persian word meaning "old man"), *Mangal, Budh, Juma^crat* ("eve of Friday), *Juma^ca* (from Arabic *Jum^ca*), *Haftah* (the Persian word which means "week").

10. The days of the week of the Buddhist Peoples

The Indian names of days of the week were borrowed by all Asian peoples professing Buddhism. The *Thai* (Siamese) names *van Atit, van Chan* (from *Chandra*, an other Sanskrit name of the Moon), *van Angkan, van Phut, van Prahat, van Suk, van Sau* are versions of Indian names. Analogous are the *Mongol* names of the second kind *Ad'yaa, Sum'yaa, Angarag, Bud, Burhaspad, Sugar, Sanchir*. The *Tibetan* names of days of the week *Nima, Dava, Migmar, L'agpa, P'urbu, Pasan, Panpa* coinciding with the names of corresponding planets can be considered as translations of the Indian names. The *Mongol* names of the third kind *Nyam, Davaa, Myagmar, Lhagva, Pürev, Baasan, Byamba* are versions of the Tibetan names. Old names of *Kalmyks* who came from Mongolia to lower Volga are close to *Mongol* and *Buryat* names (modern *Kalmyk* names are versions of Russian names).

The *Japanese* names of days of the week *Nichiyōbi, Getsuyōbi, Kayōbi, Suiyōbi, Mokuyōbi, Kin'yōbi, Doyōbi* and the *Korean* names *Ilyoil, Voryoil, Hwayoil, Suyoil, Moyoil, Kimyoil, Thoyoil* also can be considered as translations of the Indian names: the literal meanings of these names are "day of the Sun", "day of the Moon", "day of fire", "day of water", "day of wool", "days of metal (gold)", "day of earth (soil)", but the Chinese names of the planets Mars, Mercury, Jupiter, Venus, and Saturn are *Huo hsing* (the star of fire), *Shui hsing* (the star of water), *Mu hsing* (the star of wood), *Chin hsing* (the star of gold), *Tu hsing* (the star of soil) respectively (fire, water, wood, gold, and soil were five elements of classical Chinese science). Since the modern Chinese name of Sunday means "day of the Sun" and all other names of modern Chinese days of the week contain the character *Hsing* - "star", it is probably that the *old Chinese* names of days of the week had the same meanings as modern Japanese and Korean names and also were translations of the Indian names.

11. The Origin of the Planetary Names of the Days of the Week

The ordering of the planets in the names of the days of the week is explained as follows: each day of the week and each diurnal and nocturnal hour have the "celestial lord", the "lords" of days are "lords" of their first diurnal

hours. The "lord" of the first diurnal hour of Sunday (and of Sunday itself) is the Sun, the "lord" of the second diurnal hour of Sunday is the following planet in the direction to the Earth in the Ptolemaic system, that is Venus, the "lord" of the third diurnal hour of Sunday is the following planet in the same direction, that is Mercury, the "lord" of the fourth diurnal hour of Sunday is the Moon, the "lords" of the 5th-12th hours of Sunday are Saturn, Jupiter, Mars, the Sun, Venus, Mercury, the Moon, Saturn respectively. Therefore the "lord" of the 1st nocturnal hour of Monday is Jupiter, Jupiter is also the "lord" of 8th nocturnal hour of Monday, the "lords" of 9th, 10th, 11th, and 12th nocturnal hours of Monday are Mars, the Sun, Venus, and Mercury respectively, and the "lord" of the first diurnal hour of Monday (and of Monday itself) is the Moon. Analogously the "lords" of Tuesday, Wednesday, Thursday, Friday, and Saturday are Mars, Mercury, Jupiter, Venus, and Saturn respectively.

The system could appear only in the *Hellenistic age* when the Biblical seven-day week, the division of day and night on 24 hours introduced by Egyptians and the Ptolemaic order of planets became well known. Since this system in India was the same as in Rome, both systems had the common root. This common root probably was the Indo-Iranian cultus of *Mithra* very popular in the Roman empire.

The planetary names of days of the week appeared in Rome in I century A.D.: these names were used by the emperor Nero, whose letter to Cossus Lentulus begins as following: *Nerone Caesari Augusti Cosso Lentulo Cossi fil. VIII Idus febrariis dies solis, luna XIIIIX nun[dinis] Cumis V nun[dinis] Pomptis* ([2], p. 268), this date is Sunday February 6 A.D. 60, 16th day of the Lunar month.

In Trajan baths on the Esquiline Hill in Rome was discovered the Roman calendar on which the months and the days of the months were marked by bone pegs inserted into the holes, the months were designated by zodiacal signs, the days of the month were defined by holes with numbers from I to XXX of the left and right sides of the calendar, the days of the week were defined by holes under the seven busts on the top of the calendar. Two busts were destroyed in the time of discovery of the calendar. These busts are personalizations of the days of the week: the first bust with rays symbolises the Sun and Sunday, the second with two horns symbolises the moon and Monday, the third with the spear symbolises Mars and Tuesday, the fourth with hare's ears symbolizes Mercury and Wednesday, the seventh with the star on his forehead symbolizes Saturn and Saturday, the busts symbolizing Jupiter and Thursday and Venus and Friday are destroyed (see Fig. 1 borrowed from

the paper of A. Cutler [4]). On Fig. 2-6 are represented the gods Saturn, Mars, Mercury and the gods of the Sun and the Moon from a codex-calendar of A.D. 354 kept in the Vatican Library ([8], Tables 8-12), under the image of each god is written the name of corresponding day "Saturni dies", "Martis dies" etc., on the left and right of these images the "lords" of the nocturnal and diurnal hours of the corresponding day of the week are indicated.

Probably in the same times these names appeared in India.

Let us note that the Latin names of days were still used in Europe in 19th century: Martin Bartels (1769-1836), professor at the university in Kazan, Russia -where famous Nikolai Lobachevsky (1792-1856) was his student- wrote March 2, 1808 in a announcement:

"Prof. math. purae Bartels in horis 7-9 antemeridianis dierum lunae et Jovis trigonometriam analyticam planam et sphaericam, et diei Saturni horis promeridiani 4-6 applicationem ejus ad astronomiam sphaericam et geographiam mathematicam docebit" [Professor of the Pure mathematics Bartels will teach at 7-9 h. a.m. on Mondays and Thursdays Analytic trigonometry, both plane and spherical, and on Saturdays at 4-6 h. p.m. its application to Spherical astronomy and Mathematical geography] ([10], p. 31).

The correspondence between days of the week and planets was known also in Muslim countries and was described by Thābit ibn Qurra (836-901) in his *Book on the subdivision of the days of the week according to seven planets* written in his native Syriac (Aramaic) language. In this book Thābit ibn Qurra wrote:

"The first day [Sunday] is devoted to the Sun whose name is *Iliyūs*, the second day [Monday] - to the Moon whose name is *Sin*, the third day - to Mars whose name is *Arīs*, the fourth day [Wednesday] - to Mercury whose name is *Nabuq*, the fifth day [Thursday] - to Jupiter whose name is *Bāl*, the sixth day [Friday] - to Venus whose name is *Balthi*, the seventh day [Saturday] - to Saturn whose name is *Qrunus* ([3], p. 22)".

Here the god of the Sun, Mars, and Saturn are called by Greek names *Helios*, *Ares*, and *Kronos*, and the goddess of the Moon, Mercury, Jupiter and Venus are called by Babylonian names *Sin*, *Nabo*, *Baal* (Marduq), and *Balthi* (Ishtar). The book of Thābit ibn Qurra was translated into Arabic by his son Sinān ibn Thābit and this correspondence is mentioned by al-Bīrūnī (973-1048) in his *Astrology* ([1], No. 404) and by al-Najdī (15th c.) in his *Book on nautical uses* ([9], p. 159).



Figure 3. The planet Mars, Romanus 1 ms., Barb. lat. 2154, fol. 9. Biblioteca Vaticana, Rome



Figure 4. The planet Mercury, Romanus 1 ms., Barb. lat. 2154, fol. 10. Biblioteca Vaticana, Rome



Figure 5. The planet Sol, Romanus 1 ms., Barb. lat. 2154, fol. 11. Biblioteca Vaticana, Rome



Figure 6. The planet Luna, Romanus 1 ms., Barb. lat. 2154, fol. 12. Biblioteca Vaticana, Rome

12. The Days of the Week of the Former Colonial Nations

The names of days of the week of many former peoples nations are borrowed from languages of colonizers. We met the names of Sunday of *Buryats* and *Zulu* taken from Russian and Dutch. Besides the names of days in *Hausa* mentioned above there are the Hausa names *Dimashī* and *Sàmdī* of *Sunday* and *Saturday* taken from French.

The names of days of *Saha* (Yakuts) living in Siberia *Baskyhy'annya*, *Benidiennyik*, *Optuorunnyuk*, *Serede*, *Cheppier*, *Beetinse*, *Subuota* are versions of Russian names.

The names of days of *Tagalogs* living on Philippine Islands *Linggo*, *Lunes*, *Martes*, *Miyerkoles*, *Huwebes*, *Biyernes*, *Sábado* are versions of Spanish names.

The information about the names of the days of the week of the many nations discussed here has been derived from the book of F.K. Ginzel [5] and from our previous paper [7] of the author (some mistakes which were in [7] are corrected here).

The derivative history of these names clearly shows the close connection of this history with the history of Judaist, Christian, Islamic, Buddhist, and Heathen religions and the cultural connections between different and sometimes very distant peoples.

REFERENCES

1. Abū'l-Rayhan AL-BĪRŪNĪ (1934) *The Book of Instruction in the Elements of the Art of Astrology*. Ed. and transl. by R.R. Wright. London, Luzac.
2. BRIND'AMOUR, P. (1983) *Le calendrier romain*. Ottawa, University Press.
3. CHWOLSOHN, D. (1965) *Die Ssabier und Ssabismus*. Vol. 2, Amsterdam.
4. CUTLER, A. (1991) "Stalking the beast art history as asymptotic exercise". *Word & Image*, 7(3), 223-238.
5. GINZEL, F.K. (1906-1914) *Handbuch der mathematischen und technischen Chronologie*. Vol. 1-3. Leipzig-Berlin, Teubner.
6. GRUMEL, V. (1958) *La Chronologie*. Paris, Presses des Universités.
7. ROSENFELD, B.A. (1990) "The Planets and the Days of the Week". *Istoriko-Astronomicheskie Issledovaniya*, 22, 367-380 [Russian].
8. SALZMAN, M.R. (1990) *On Roman Time, the Codex-calendar of 354 and the Rythms of Urban Life in Late Antiquity*. Berkeley, University Press.

9. TIBBETS, G.B. (1981) *Arab Navigation in the Indian Ocean Before the Coming of Portuguese: translation of Kitāb al-fawā'id fī uṣūl al-baḥr wa'l-qawā'id* by Ahmad ibn Mājid al-Najdī. London, Roy. Asiat. Society.

10. VASIL'YEV, A.V. (1992) *Nikolai Ivanovich Lobachevsky*. Moscow, Nauka [Russian].