

Vol. XI, No. 2]

[July, 1969

पुराणम्

PURĀṆA

[Half-yearly Bulletin of the Purāṇa-Department]

*With the financial assistance from the Ministry of Education,
Government of India*

VYĀSA-PŪRṆIMĀ NUMBER

आत्मा पुराणं वेदानाम्



ALL-INDIA KASHIRAJ TRUST
FORT RAMNAGAR, VARANASI

The 'Purāṇa' Bulletin has been started by the Purāṇa Department of the All-India Kashiraj Trust with the aim of organising the manifold studies relating to the Purāṇas. It specially discusses the several aspects of text-reconstruction, of the interpretation of the vast cultural and historical material, and of the obscure esoteric symbolism of legends and myths of the Purāṇas. The editors invite contributions from all those scholars who are interested in the culture of the Purāṇa literature in which the religion and philosophy of the Vedas have found the fullest expression.

Annul Subs.—Inland Rs. 12

Foreign £ 1

THE PURĀNIC THEORY OF THE YUGAS AND KALPAS—A STUDY

BY

ANAND SWARUP GUPTA

[अस्मिन् निबन्धे युग-मन्वन्तर-कल्पादीनां प्रमाण-संख्या-स्वरूपाणां मनुस्मृति-महाभारत-पुराण-ज्योतिषदृष्ट्या विवेचनं कृतम् । अस्य सिद्धान्तस्य विषये आधुनिकदृष्ट्याऽपि कश्चिद् विचारोऽत्र कृतः । युगादीनां देववर्षेषु मानं ज्योतिषसिद्धान्तग्रन्थेषु पुराणेषु चैवोपलभ्यते अत्र विषये प्राचीनतरं मानं मानुषवर्षेष्वेवासीदित्यपि प्रदर्शितम् । सहस्रचतुर्युगाणामेकः कल्पः इत्येतावत्येव प्राचीना मानगणना आसीत् । युग-मन्वन्तर-कल्प इत्यनेन क्रमेण गणना तु प्रायः पौराणिकी, सा चापि ज्योतिष-सिद्धान्तनिबन्धना । पुराणानुसारेण सूर्यसिद्धान्तानुसारेण च चतुर्युग-मन्वन्तर-कल्पमानस्य तुलनात्मको विचारोऽपि कृतः । ज्योतिष-पुराणादि-प्राचीनमतानुसारेण कल्पस्य मानं प्रदर्श्य तदनुसारेण पृथिव्या उत्पत्त्या वर्तमानं काल-मानम् दत्त्वा, आधुनिक भूगर्भ-विज्ञानदृष्ट्याऽपि पृथिव्युत्पत्त्या वर्तमानकालसूचिकैका तालिकाऽप्यत्र प्रदीयते ।]

The Purāṇas have given the long computations of the Yugas and the Kalpas, in which they have divided the duration of the Universe (Brahmāṇḍa) both in its manifest and semi-manifest forms. The Purāṇas have conceived the Time or *Kāla* as beginningless and endless, and so there is no break in the order of the creation, preservation and dissolution of the Universe, in other words, there is no break in the continuity of the universe in some form or the other; for, even in the *Pralaya* the universe is not totally destroyed, but merges into its unmanifest cause from which it emerged at the time of its creation, as says the *Gītā*—

अव्यक्तादीनि भूतानि व्यक्तमध्यानि भारत ।

अव्यक्तनिधनान्येव तत्र का परिदेवना ॥ (2. 28)

(Beings are unmanifest in their origin, manifest in the interval, and unmanifest in their end). The Viṣṇu Purāṇa puts this Purāṇic

truth of the continuity of the creation, preservation and dissolution of the universe in clear words :—

अनादिर्भगवान् कालो नान्तोऽस्य द्विज विद्यते ।

अव्युच्छिन्नास्ततस्त्वेते सर्गस्थित्यन्तसंयमाः ॥

(Viṣ.-P., I. 2. 26)

Thus the creation, preservation and dissolution (*Sṛṣṭi*, *Sṭhiti* and *Pralaya*) go on taking place after each other in the fixed order and after fixed intervals like the day and night.

The Purāṇas call the duration of the Universe in its manifest form (i. e. the time of its creation and preservation, or its *Sṛṣṭi-kāla* and *Sṭhiti-kāla*) as a Kalpa which is regarded as the Day of Brahmā, the Creator, on the analogy of the day of man when he is active.

A Kalpa has been divided into 14 Manvantaras, and each Manvantara into 71 Catur-Yugas (a term generally used in the Purāṇas) or Daiva-Yugas (a term used in the Manu-Smṛti) or Mahāyugas (a term generally found used in the astronomical works). Each Mahāyuga consists of four Yugas, viz. Kṛta-Yuga, (or Satya-Yuga), Tretā-Yuga, Dvāpara-Yuga and Kali-Yuga, of descending duration of the ratio of 4:3:2:1. Thus, the Kṛta-Yuga is of 4,000 divine years with a *Sandhi* of 400 divine years in the beginning and a *Samdhyāṁśa* of the similar length at the end, the Tretā-Yuga is of 3,000 divine years with a *Sandhi* and a *Samdhyāṁśa* of 300 divine years each, the Dvāpara-Yuga of 2,000 divine years with a *Sandhi* and *Samdhyāṁśa* of 200 divine years each and the Kaliyuga of 1000 divine years with a *Sandhi* and a *Samdhyāṁśa* of 100 divine years each. All these four Yugas (with their durations in the descending order, i. e. of 4000+400+400, 3000+300+300, 2000+200+200, 1000+100+100 divine years) make a Mahā-yuga of 12,000 divine years, each divine year being equal to 360 human years.

This computation of the length of the four Yugas has been considered by some modern scholars as 'purely hypothetical', 'extravagant'² and 'gigantic'. But considering the eternity and

1. A. D. Pusalker, *Studies in the Epic and the Purāṇas*, Introduction, p. Ivi.
2. A. Cunningham, *The Book of Indian Eras*, p. 4.
3. K. D. Sethna, 'Megasthenes and Indian Chronology', *Purāṇa*, X. 2 (July 1968) p. 131.

infinity of the Time (*Kāla*), no division of time, whatever may be its length, can properly be called as extravagant and gigantic. And according to the Indian philosophical conception, Time is one and indivisible and so any division of time by its very nature must be purely hypothetical and imaginary. It must be conceded, however, that this long computation of the Yugas as given in the Purāṇas may also be taken as representing the later Purāṇic view only, for the earlier view seems to favour a much smaller computation of the four Yugas.

The Manu-Smṛti gives the length of the four Yugas as follows :—

चत्वार्याहुः सहस्राणि वर्षाणां तु कृतं युगम् ।
तस्य तावच्छती संध्या संध्यांश्च तथाविधः ॥
इतरेषु ससंध्येषु ससंध्यांशेषु च त्रिषु ।
एकापायेन वर्तन्ते सहस्राणि शतानि च ॥
यदेतत् परिसंख्यातमादावेव चतुर्युगम् ।
एतद् द्वादशसाहस्रं देवानां युगमुच्यते ॥ (1.69-71)

From these ślokas it appears that the Manu-smṛti gives the length of the four Yugas most probably in the human years and not in the divine years: for, firstly, it does not mention here these years as *daiva* (divine), and secondly, in the last śloka (71) quoted above, four human Yugas (‘मानुषं चतुर्युगम्’ कुल्लूकीका) of the collective length of 12,000 years (एतद् द्वादशसाहस्रं) are said to make a *devānām yugam* (Divine Yuga) and if these four Yugas are *mānuṣa* (human), then the length of their duration might also have been intended as *mānuṣa*. But following the Purāṇic view the commentator Kullūka remarks here that the number of the years of the duration of the four Yugas mentioned here is divine (वर्षसंख्या चैवं दिव्यमानेन तस्यैवानन्तरप्रकृतत्वात्)

The Mahābhārata (Vana-Parva, 188.22-26, Nīlakaṇṭha's text) gives also the length of the four Yugas which is similar to that given by the Manu-Smṛti, but it (the Mbh.) does nowhere mention the years as *divine*. It does not even say that the four Yugas collectively make one *divya* Yuga; it simply mentions that the 12,000 years of the four Yugas are collectively called the *yugākhyā*—

एषा द्वादशसाहस्री युगाख्या परिकीर्त्तिता । (27 cd)

But the Purāṇas clearly mention the years of the duration of the four Yugas as *divya* (divine); e. g.—

दिव्यैर्वर्षसहस्रैस्तु कृतत्रेतादिसंज्ञितम् ।
चतुर्युगं द्वादशभिस्तद्विभागं निबोध मे ॥
चत्वारि त्रीणि द्वे चैकं कृतादिषु यथाक्रमम् ।
दिव्याद्भानां सहस्राणि युगेष्वाहुः पुराविदः ॥
तत्प्रमाणैः शतैः संध्या पूर्वा तत्राभिधीयते ।
संध्यांश्चैव तत्तुल्यो युगस्यानन्तरो हि सः ॥

(Viṣṇu P., I. 3. 12-14)

कृतं त्रेता द्वापरं च कलिश्चेति चतुर्युगम् ।
देवैर्वर्षसहस्रैस्तु तद् द्वादशभिरुच्यते ॥

(Brahma. P., 229. 5)

This Purāṇic computation of the length of the four Yugas in the divine years seems to be a later elaboration, the earlier computation as given in the Manu-smṛti and the Mahābhārata being much smaller. But even the earlier Purāṇic view as represented by the Vāyu-Purāṇa (32.58 ff.) seems to favour the smaller computation in the human years. According to this Purāṇa the *Caturyuga* (four Yugas taken collectively) of the length of 12,000 years has four *Pādas* or quarters in the form of the four Yugas; thus—

1. Kṛta-yuga	4,800 years	Prakriyā-Pāda
2. Tretā-yuga	3,600 years	Anuṣaṅga-Pāda
3. Dvāpara-yuga	2,400 years	Upodghāta-Pāda
4. Kali-yuga	1,200 years	Saṁhāra-Pāda

The Purāṇa is said to be also of the 12,000 ślokas and to have the similar four *Pādas* :—

एतद् द्वादशसाहस्रं चतुर्युगमिति स्मृतम् ।
एवं पादैः सहस्राणि श्लोकानां पञ्च पञ्च च ॥
संध्यासंध्यांश्चैव द्वे सहस्रे तथापरे ।
एवं द्वादशसाहस्रं पुराणं कवयो विदुः ॥
यथा वेदश्चतुष्पादश्चतुष्पादं तथा युगम् ।
यथा युगं चतुष्पादं विधात्रा विहितं स्वयम् ।
चतुष्पादं पुराणं तु ब्रह्मणा विहितं पुरा ॥

(Vāyu-P. 32, 65-67)

Here the 12,000 years of the *Catur-yuga* and its four *Pādas* are said to be corresponding with the 12,000 ślokas and the four *Pādas* of the *Purāṇa*, which indicates that the computation of the four Yugas according to the *Vāyu Purāṇa* here is in the human years and not in the divine years. The context preceding these ślokas also leads to the same conclusion.

But later on the *Purāṇas* elaborated the computation of the length of the four Yugas, perhaps under the influence of the *Siddhānta Jyotiṣa*, and so the computation of the four Yugas in the *human years* was replaced by that in the *divine years*, which made a lot of difference. According to the earlier computation in the human years the length of a *Catur-yuga* was 12,000 years, while according to the later *Purāṇic* computation in *divine* years, the length of the *Caturyuga* comes to 43,20,000 ($12,000 \times 360$) human years.

A Cunningham in his '*Book of the Indian Eras*' has suggested the source of this longer *Purāṇic* computation in divine years. According to him the present *Purāṇic* system of computation is the invention of the astronomers "which they based on their newly acquired knowledge of the precession". The precession of the equinoxes per year fixed by *Parāśara* was 46.5 seconds and that by *Ārya-bhaṭa* was 46.2 seconds. *Shri K. D. Sethna* in his article '*Megasthenes and Indian Chronology*' (Pub. in '*Purāṇa*' X. 2) on the basis of these facts analyses this problem as follows:

Given the precession, what would be the period of one revolution through the whole circle of the ecliptic of 360 degrees? As 60 minutes make 1 degree and 60 seconds 1 minute, to cover the full circle of the ecliptic takes 1,296,000 ($360 \times 60 \times 60$) seconds divided by 46.5 or 46.2. Then we get $\frac{12,960,000}{465}$ or $\frac{12,660,000}{462}$ years, which by dividing them by three become $\frac{43,20,000}{155}$ and $\frac{43,20,000}{154}$ years. The numerator is exactly the number of years which goes into a *Mahāyuga* (or *Caturyuga*). And 43,20,000 years is the period in which the ecliptic would be circled 155 or 154 times.

According to both the earlier view and the later *Purāṇic* view 1,000 *Caturyugas* go to make the length of the duration of

a Kalpa, i.e. the duration of the existence of the universe, which is also called *Brahmā's Day* (ब्रह्माहः); cf.—

दैविकानां युगानां तु सहस्रं परिसंख्यया ।

ब्राह्ममेकमहर्षेयं तावती रात्रिरेव च ॥

(Manu-Smṛti. 1.72)

एषा द्वादशसाहस्री युगाख्या परिकीर्तिता ।

एतत् सहस्रपर्यन्तमहो ब्राह्ममुदाहृतम् ॥

(Mbh., Vana-P., 188 28)

कृतं त्रेता द्वापरश्च कलिश्चैव चतुर्युगम् ।

प्रोच्यते तत्सहस्रं च ब्रह्मणो दिवसं मुने ॥

(Viṣṇu-P., I. 3. 15)

In the *Nirukta* and the *Bhagavad-Gītā* the *Caturyuga* or the *Mahāyuga* is simply called as the *Yuga*—

‘तदेतदहर्युगसहस्रं.....युगसहस्रं रात्रिस्तावेतावहोरात्रावजस्रं परिवर्त्तते’—

Nirukta, 14. 4.

सहस्रयुगपर्यन्तमहर्षद्ब्रह्मणो विदुः ।

रात्रिं युगसहस्रान्तां तेऽहोरात्रविदो जनाः ॥

(Bhag.-Gītā, 8. 17; *Nirukta* 14. 4)

By the word ‘Yuga’ used by *Yāska* here Prof. Mankad in his work *Purāṇic Chronology*, remarks that “the designation (*Catur-yuga* or *Kalpa* or *Divya-yuga*) employed by the *Purāṇas* for units of extreme length are replaced by one (i. e. *Yuga*) which *Purāṇically* means a lesser duration”. But I think *Yāska's yuga* is the same as the *Daiva Yuga* of the *Manu-Smṛti* or the *Caturyuga* of the *Purāṇas*, for the *Manu-Smṛti* uses the term ‘Yuga’ as a synonym for its ‘*Daivika yuga*’ also; cf.

दैविकानां युगानां तु सहस्रं परिसंख्यया ।

ब्राह्ममेकमहर्षेयं तावती रात्रिरेव च ॥ 72

तद्वै युगसहस्रान्तं ब्राह्मं पुण्यमहर्विदुः ।

रात्रिं च तावतीमेव तेऽहोरात्रविदो जनाः ॥ 73

(Manu.-Smṛti, Adh. 1)

Compare also the *Vāyu-Purāṇa*, 32, 67, quoted above, where the word *Yuga* is used for the *Chatur-yuga*.

YUGAS ASSOCIATED WITH DHARMA

The four Yugas are associated with *dharma* or moral virtues, and the *dharma* gradually decreases by one *pāda* (quarter) from *Kṛta* to *Kali*. Thus, the *dharma* in the *kṛta*-Yuga is of all the four *pādas* (i. e. in its entirety), in the *Tretā* it loses its one *pāda* and becomes of three *pādas* only, and so on up to *Kali*-Yuga when its one *pāda* only remains ; cf. the *Manu-Smṛti* 1. 81-82 :—

चतुष्पात् सकलो धर्मः सत्यश्चैव कृते युगे ।
नाधर्मेणागमः कश्चिन्मनुष्यान् प्रतिवर्त्तते ॥
इतरेष्वागमाद् धर्मः पादशस्त्ववरोपितः ।
चौरिकानृतमायामिधर्मश्चापैति पादशः ॥

Thus, there is the gradual deterioration from Yuga to Yuga. The period of human age is also subject to this gradual deterioration. In the *Kṛta* yuga man lives for 400 years, in the *Tretā* 300 years in the *Dvāpara* 200 years and in the *Kali*-Yuga 100 years only :

अरोगाः सर्वसिद्धार्थाश्चतुर्वर्षशतायुषः ।
कृते त्रेतादिषु ह्येषामायुर्हसति पादशः ॥

(*Ibid.*, Śl. 83)

This theory of the gradual deterioration in life from Yuga to Yuga is opposed to the modern theory of evolution.

The *dharma* of each Yuga differs from the other. In the *Kṛta* *tapas* (austerity) in the *Tretā* *jñāna* (knowledge of Self), in the *Dvāpara* *Yajña* (Sacrificial cult) and in the *Kali* *dāna* (charity) is the main *dharma* :

अन्ये कृतयुगे धर्मास्त्रेतायां द्वापरे परे ।
अन्ये कलियुगे नृणां युगहासानुरूपतः ॥
तपः परं कृतयुगे त्रेतायां ज्ञानमुच्यते ।
द्वापरे यज्ञमेवाहुर्दानमेकं कलौ युगे ॥

(*Ibid.*, Śl. 85-86)

Human actions bear fruits according to the influence of a Yuga :—

वेदोक्तमायुर्मर्त्यानामाशिषश्चैव कर्मणाम् ।
फलन्त्यनुयुगं लोके प्रभावश्च शरीरिणाम् ॥

(*Ibid.*, Śl. 84)

The same view of the gradual deterioration from Yuga to Yuga and different characteristics and *dharma* of the Yugas is held by the *Purāṇas* and the *Epics* also. According to the *Vāyu-Purāṇa* even the different gods are worshipped in the different Yugas.—*Brahmā* in the *Kṛta*, *Yajña* in the *Tretā*, *Viṣṇu* in the *Dvāpara* and *Mahādeva* in the *Kali* :—

ब्रह्मा कृतयुगे पूज्यस्त्रेतायां यज्ञ उच्यते ।
द्वापरे पूज्यते विष्णुरहं पूज्यश्चतुर्वर्षि ॥

(*Vāyu. P.*, 32. 21)

Even the mode of worship differs from Yuga to Yuga—in the *Kṛta* *dhyāna* (meditation) in the *Tretā* worshipping by means of *Yajñas*, in the *Dvāpara* *arcā* or *pūjā*, and in the *Kali* the chanting and repetition of God's name bear similar fruits :—

ध्यायन्कृते यजन्यज्ञेस्त्रेतायां द्वापरेऽर्चयन् ।
यदाप्नोति तदाप्नोति कलौ संकीर्त्य केशवम् ॥

(*Viṣṇu-P.* VI. 2. 19.)

MANVANTARAS

Neither *Yāska*, nor the *Gītā*, nor the *Mbh.-Vana-Parva* and nor even the *Manu-Smṛti* in the ślokas quoted above have inserted the computation of the fourteen *Manvantaras* within the frame of the scheme of computation of the *Brāhma-ahaṇ* (the Day of *Brahmā*) or the *Kālpa*, although the *Manu-smṛti* mentions seven *Manu*-s and their *antara-s* or durations during which they created and protected the creatures :—

स्वायम्भुवस्यास्य मनोः षड्वंश्या मनवोऽपरे ।
सृष्टवन्तः प्रजाः स्वाः स्वा महात्मानो महौजसः ॥ 61
स्वारोचिषश्चौत्तमिश्च तामसो रैवतस्तथा ।
चाक्षुषश्च महातेजा विवस्वत्सुत एव च ॥ 62
स्वायम्भुवाद्याः सप्तैते मनवो भूरितेजसः ।
स्वे स्वेऽन्तरे सर्वमिदमुत्पाद्यापुश्वराचरम् ॥ 63

(*Manu*, Adh. 1)

But in the *Purāṇas* as well as in the works of the *Siddhānta-Jyotiṣa* we have also the computation of the *Manvantaras* (the

periods of Manu-s), fourteen of which go to make the total period of a Kalpa or the *Brāhma-ahaṇ* (the Day of Brahṁā) inserted between Yuga (i. e. the Mahāyuga) and Kalpa; cf.

ब्रह्मणो दिवसे ब्रह्मन् मनवस्तु चतुर्दश ।
भवन्ति परिमाणं च तेषां कालकृतं शृणु ॥ 16
चतुर्युगानां संख्याता साधिका ह्येकसप्ततिः ।
मन्वन्तरं मनोः कालः सुरादीनां च सत्तम ॥ 18
चतुर्दशगुणो ह्येष कालो ब्राह्ममहः स्मृतम् ।
ब्राह्मो नैमित्तिको नाम तस्यान्ते प्रतिसञ्चरः ॥ 22

(Viṣṇu-P., I. 3)

चतुर्युगसहस्रं तु कथ्यते ब्रह्मणो दिनम् ।
स कल्पस्तत्र मनवश्चतुर्दश द्विजोत्तमाः ॥

(Brahma-P., 231.12)

So, according to the Viṣṇu-Purāṇa, a Manvantara (Manu's Period) consists of something more than 71 Catur-yugas (साधिका ह्येकसप्ततिः) The commentator Śrīdhara explains the word *sādhikā* as follows:—“चतुर्युगसहस्रप्रमाणस्य ब्रह्मदिनस्य चतुर्दशधाविभागे प्रतिविभागमेकसप्ततिश्चतुर्युगानि भवन्ति : अवशिष्यते चतुर्युगषट्कान्तरस्य चतुर्दशांशो यथागणितः प्रतिमन्वन्तरमेकसप्ततेरधिक इत्यर्थः”.

Thus, as the Day of Brahṁā or Kalpa is equal to the 14 Manvantaras or 1000 Caturyugas, a Manvantara actually is equal to $71\frac{6}{14}$ Caturyugas (for, $1000 \div 14 = 71 + \frac{6}{14}$).

The Sūrya-Siddhānta (the earliest available work on the *Siddhānta-Jyotiṣa*) makes this point of '*sādhikā*' more clear. In its computation of Yugas and Kalpas it says that after every Manvantara there is a *Sandhi* equal to the period of a Kṛta-Yuga (i. e. of 4800 years) and this *Sandhi* after each Manvantara is characterised by *jala-plava* (water-immersion or deluge), and there is also a *Sandhi* in the beginning of a Kalpa, which (*Sandhi*) is the fifteenth and is also of the length of the Kṛta-Yuga :—

युगानां सप्ततिः सैका मन्वन्तरमिहोच्यते ।
कृताब्दसंख्या तस्यान्ते संधिः प्रोक्तो जलप्लवः ॥
ससंघयस्ते मनवः कल्पे ज्ञेयाश्चतुर्दश ।
कृतप्रमाणः कल्पादौ संधिः पञ्चदशः स्मृतः ॥

(Sūrya-Siddhānta, I. 18-19)

Thus, the first Manvantara in a Kalpa has two *Sandhis*, one in the beginning and the other in the end, so there are 15 *Manvantara-sandhis* of 4800 years each in a Kalpa, besides the 14 Manvantaras of 71 Caturyugas each. These 15 *Sandhis* ($= 4800 \times 15 = 72,000$ years or 6 Caturyugas) and the 14 *Manvantaras* ($= 71 \times 14 = 994$ Caturyugas, together make the total of 1000 Caturyugas.

The conception of the 14 Manvantaras forming the duration of a Kalpa or the Day of Brahṁā is mainly Purāṇic. According to the Purāṇas a Manvantara is a period of $\frac{1000}{14}$ or $71\frac{6}{14}$ Caturyugas and according to the *Sūrya-sindhānta*, as quoted above, it is a period of 71 *Mahāyugas* + 4800 divine years as its *Sandhi* except the first Manvantara which is of the period of 71 *Mahāyugas* + 9600 divine years (the two *Sandhis* one in the beginning and the other at the end). Both these computations come to the same thing. Thus, according to this computation a Manvantara is a period of 8,52,000 divine years and 30,67,20,000 ($12000 \times 360 \times 71 + 17,28000$) mortal years.¹

A Manvantara is named after its presiding deity called *Manu* who is in charge of the preservation and protection of the universe during his period. According to the Viṣṇu-Purāṇa (III. 1f.) out of the 14 Manvantaras of the present Kalpa six Manvantaras have already passed, viz.—

1. Svāyambhuva (स्वायम्भुव), 2. Svārociṣa (स्वारोचिष), 3. Uttama (उत्तम), 4. Tāmasa (तामस), 5. Raivata (रैवत) and 6. Cākṣuṣa (चाक्षुस).

The seventh called the Vaivasvata (वैवस्वत) is the *present* Manvantara and the seven *future* Manvantaras are as follows :—

8. Sāvarṇi (सावर्णि),
9. Dakṣa-sāvarṇi (दक्ष-सावर्णि),
10. Brahma-sāvarṇi (ब्रह्म-सावर्णि),
or
Meru-sāvarṇi (मेरु-सावर्णि) (Devī Bhāg. X. 13. 26).
11. Dharma-sāvarṇi (धर्म-सावर्णि)
or
Sūrya-sāvarṇi (सूर्य-सावर्णि) (D. Bhāg.)

1. Viṣṇu-Purāṇa I. 3. 19-21,

12. Rudra-sāvarṇi (रुद्र-सावर्णि)
or
Candra-sāvarṇi (चन्द्र-सावर्णि) (D. Bhāg.)
13. Raucya (रौच्य) (= Ag. P., Adh. 150; Hariv. I. 7. 5)
or
Deva-sāvarṇi (देव-सावर्णि) (Bhāg.-P. VIII. 13. 27)
14. Bhautya (भौत्य) (= Ag.-P.; Hariv.)
or
Indra-sāvarṇi (इन्द्र-सावर्णि) (Bhāg.-P.)
or
Viṣṇu-sāvarṇi (विष्णु-सावर्णि) (D. Bhāg.)

Of these future Manus the 8th is the son of Vivasvān (Sun) from his wife Chāyā, and is therefore the step-brother of Vaivasvata-Manu and resembles him, whence he is called *Sāvarṇi* (of the same *varṇa* or form). The next four Manus (9-12) are the sons of Priyavrata and the grandsons of Svāyambhuva-Manu (the first Manu). According to the Harivaṁśa (I. 7. 6) these four Manus (9-12) are also called *Meru-sāvarṇis*, for they obtained the Manu-hood by performing austerities on the Meru mountain (मेरुसावर्णिः, श्रुत्वारो ब्रह्मसावर्णिः, रुद्रसावर्णिः, मेरुसावर्णिः, दक्षसावर्णिश्च । एते मेरौ तपः कृत्वा सिद्धिं प्राप्ता इति सर्वेऽपि मेरुसावर्णा इत्युच्यन्ते—नीलकण्ठः). Raucya is the son of Prajāpati Ruci and Bhautya is the son of Bhūti.

Each Manvantara has its own *Saptarṣis* (Seven Sages), gods, Indra, Manu and his royal sons who are in charge of the protection of the world and are simultaneously created in the beginning and destroyed at the end of their Manvantara :—

सप्तर्षयः सुराः शक्रो मनुस्तत्सूनवो नृपाः ।

एककाले हि सृज्यन्ते संहियन्ते च पूर्ववत् ॥

In each Manvantara the *Sāttviki Śakti* of Viṣṇu is also incarnated in the form of his partial incarnation to help in the work of the protection of the universe.

Below are given gods (in their *gaṇas*), Indra, part-incarnation of Viṣṇu and principal Purāṇic episodes of each Manvantara according to the Viṣṇu.-P. (III. 1-2) and the Bhāg.-P. (VIII. 1-24) :

<i>Manvantara or Manu</i>	<i>Gaṇa-s of Gods</i>	<i>Indra</i>	<i>Viṣṇu's incarnation</i>	<i>Episode relating to</i>
1. Svāyam-bhuva	Yāma-s?	Yajña	Kapila
2. Svārociṣa	1. Pārā-vata-s 2. Tuṣita-s	Vipa- ścit	Vibhu	...
3. Uttama	1. Sudhā-man-s 2. Satya-s 3. Japa-s 4. Pratar-dana-s 5. Vaśa-vartīn-s	Suśānti	Satyasena	...
4. Tāmasa	1. Supāra-s 2. Hari-s 3. Satya-s 4. Sudhī-s	Śibi	Harime-dhasa	Gajendra-mokṣa
5. Raivata	1. Amitā-bha-s 2. Bhūta- raya-s 3. Vaikuṇ- ṭha-s 4. Sume-dha-s	Vibhu	Vaikunṭha	...
6. Cākṣuṣa	1. Āpya-s 2. Prasūta-s 3. Bhavya-s 4. Pṛthu- ka-s 5. Lekha-s	Mano- java	Ajita	1. Samudra-manthana (churning of the ocean) and Kūrma-Avatāra

2. War between Gods and Asuras—Jambha Namuci etc. killed
7. Vaivasvata (Śrāddha-deva Manu) 1. Āditya-s 2. Vasu-s 3. Rudra-s 4. Viṣve-deva-s 5. R̥bhu-s 6. Aśvin-s Purañ- dara Vāmana Bali-Vāmana
8. Sāvarṇi 1. Sutapa-s 2. Amitā-bha-s 3. Mukhya-s Bali Sārva-bhauma
9. Dakṣa-sāvarṇi 1. Pāra-s 2. Marīci-garbha-s 3. Sudharman-s Adbhu- ta R̥ṣabha
10. Brahma-sāvarṇi 1. Sudhā-man-s 2. Viśud-dha-s 3. Nirvāṇa-rata-s Śānti (Viṣ-P) or Śambhu (Bhāg.) Viṣvaksena
11. Dharma-sāvarṇi 1. Vihañ-gama-s 2. Kāma-gama-s 3. Nirvāṇa-rata-s Vṛṣa Vaidhṛta Dharmasetu
12. Rudra-sāvarṇi 1. Harita-s 2. Rohita-s 3. Suma-nas-s R̥ta- Svadhāman dhāman

4. Sukar-man-s
5. Surāpa-s
13. Raucya 1. Sutrā-man-s 2. Sukar-man-s 3. Sudharman-s Divas-pati Yogeśvara
14. Bhautya 1. Cākṣu-ṣa-s 2. Pavitra-s 3. Kaniṣ-ṭha-s 4. Bhrā-jika-s 5. Vācāvr-ddha-s Śuci Bṛhad-bhānu

KALPA

As 1,000 Mahāyugas, each of 12,000 divine years or of 43,20,000 human years, make a Kalpa or cosmic period, the length or duration of a Kalpa comes to 1,20,00,000 divine years or 4,32,00,00,000 human years. Since a Kalpa is the *Day of Brahmā* (Creator), 30 such Kalpas make a *Month of Brahmā*. And as there are 30 *tithis* (lunar days) of different designations in a lunar month, on the same analogy the different names of the 30 Kalpas of Brahmā's Month are given in the Matsya-Purāṇa (Adh. 290) as follows:

1. Śveta (श्वेत), 2. Nīla-lohita (नीललोहित), 3. Vāma-deva (वामदेव), 4. Rāthantara (राथन्तर), 5. Raurava (रौरव), 6. Deva (देव), 7. Bṛhat-kalpa (बृहत्कल्प), 8. Kandarpa (कन्दर्प), 9. Sadya (सद्य), 10. Īśāna (ईशान), 11. Tamaḥ (तमः), 12. Sāra-svata (सारस्वत), 13. Udāna (उदान), 14. Gāruḍa (गारुड), 15. Kaurma (कौर्म), 16. Nārasimha (नारसिंह), 17. Samāna (समान), 18. Āgneya (आग्नेय), 19. Soma (सोम), 20. Mānava (मानव), 21. Tat-pumān (तत्पुमान्), 22. Vaikuṇṭha (वैकुण्ठ), 23. Lakṣmī-kalpa (लक्ष्मी-कल्प), 24. Sāvitrī-kalpa (सावित्रीकल्प),

25. Aghora (अघोर), 26. Vārāha (वाराह), 27. Vairāja (वैराज),
28. Gauri-kalpa (गौरिकल्प), 29. Māheśvara (माहेश्वर), 30. Pitr-
kalpa (पितृकल्प).

Of these 30 Kalpas the 15th (*Kaurma*) is the Full-Moon Day (पौर्णमासी) and the 30th (*Pitr-kalpa*) the New-Moon Day (कुहू, अमावस्या) of Brahmā's Month.

Out of the eighteen Mahāpurāṇas the following Purāṇas deal with the accounts of some of these Kalpas, as follows (see Matsya-P., Adh. 53):—

Purāṇa		Kalpa
Padma-Purāṇa	deals with	Pādma-Kalpa (?)
Viṣṇu-Purāṇa	,,	Vārāha-Kalpa (26)
Vāyu-Purāṇa	,,	Śveta-Kalpa (1)
Bhāgavata-P.	,,	Sārasvata-Kalpa (12)
Nāradya-P.	,,	Br̥hat-Kalpa (7)
Agni-P.	,,	Īśāna-Kalpa (10)
Bhaviṣya-P.	,,	Aghora-Kalpa (25)
Brahma-vaiv.-P.	,,	Rāthantara-Kalpa (4)
Liṅga-P.	,,	Āgneya-Kalpa (18)
Vārāha-P.	,,	Mānava-Kalpa (20)
Skanda-P.	,,	Tat-puruṣa-Kalpa (21)
Vāmana-P.	,,	Kūrma-Kalpa (15)
Kūrma-P.	,,	Lakṣmī-Kalpa (23)
Garuḍa-P.	,,	Gāruḍa-Kalpa (14)

The Vāyu-Purāṇa (Adh. 21) gives a different list of the 28 Kalpas (perhaps on the analogy of the 28 Nakṣatras or Constellations in a lunar month) as follows:—

1. भव, 2. भुवः, 3. तपः, 4. भव, 5. रम्भ, 6. ऋतुकल्प, 7. क्रतु,
8. वह्नि, 9. हव्यवाहन, 10. सावित्र, 11. भुवः, 12. उस्मि, 13. कुशिक,
14. गन्धर्व, 15. ऋषभ, 16. षड्ज, 17. मार्जालीय, 18. मध्यम, 19. वैराजक,
20. निषाद, 21. पञ्चम, 22. मेघवाहन, 23. चिन्तक, 24. आकृति, 25. विज्ञाति,
26. मनः, 27. भाव, 28. बृहत् (or रथन्तर).

In addition to the twenty-eight Kalpas the Vāyu-P. (Adh. 22) gives 5 more Kalpas—1. श्वेतकल्प, 2. रक्त-, 3. पीतवासस्-,
4. कृष्ण-, 5. विश्वरूप—the names of which are derived from the forms which the Creator assumes in these Kalpas.

Each Kalpa (Cosmic Period) or the Day of Brahmā is followed by the *Pralaya* or the *Ekārṇava* state (Great Deluge) in which the whole of the universe up to the *Svar-Loka* is destroyed. This *Pralaya* is called *naimittika* as it is occasioned by the Night of Brahmā when he remains asleep (or inactive).¹ At the end of Brahmā's life of his 100 years (360×100 Kalpas) the entire universe including even Brahmā and all other Gods and all the fourteen *Loka-s* are destroyed and merge into their original cause or *Prakṛti*; hence this *Pralaya* is called the *Prākṛtika Pralaya*.² (cf. Viṣṇu-P. VI. 1f.)

Brahmā's full age of his 100 years is called *Para*, and half of this period is called *Parārdha*. One *Parārdha* of Brahmā's life has passed, the last Kalpa of this *Parārdha* is also called the *Pādma-Kalpa*, for the Earth (or the world) in that Kalpa is produced in the form of a Lotus from the navel of Viṣṇu; the present Kalpa, which is also the first Kalpa of the second *Parārdha* of Brahmā's life, is called the *Śveta Vārāha-Kalpa*. (Viṣ. P. I. 3. 26 f.; Bhāg. III. 11. 33 ff.; Mt.-P. 164. 5; 169. 2f.)

As the scheme of the four Yugas is associated with the varying degrees of the *dharma* and *adharma* (i.e. the gradual deterioration of *dharma*, and gradual increase of *adharma* from the Kṛta-Yuga to the Kali-Yuga), this scheme is said to prevail in the Bhāratavarṣa only out of the nine *Varṣa-s* of the Jambu-dvīpa, and not in the remaining eight *Varṣa-s* where there is no *dharma* and *adharma* and no gradation of high and low in their social order. (cf. Viṣṇu.-P. II. 3. 19—चत्वारिं भारते वर्षे युगान्यत्र महामुने । कृतं त्रेता द्वापरश्च कलिश्चान्यत्र न क्वचित् ।³ In this respect these Yugas may be likened to the six *Rtus* (seasons)

1. Cf. also Viṣṇu-P. I. 3. 18 ff.

2. The *jala-plava* (Deluge) after each Manvantara may not be universal, but this *Naimittika Pralaya* is universal. A *jala-plava* is mentioned in the Matsya-Purāṇa, when the Matsya incarnation of Viṣṇu narrated the Matsya-Purāṇa to Vaivasvata Manu. So this *jala-plava* might have occurred after the sixth (Cākṣuṣa) Manvantara or in the beginning of the seventh Manvantara.

3. Cf. also Viṣṇu-P. II. 1. 25-26.

यानि किपुरुषादीनि वर्षाण्यष्टौ महामुने ।

तेषां स्वभाविकी सिद्धिः सुखप्राया ह्यत्यन्तः ॥

विपर्ययो न तेष्वस्ति जरामृत्युभयं न च ।

धर्माधर्मौ न तेष्वस्तां नोत्तमाधममध्यमाः ॥

also cf. *ibid*, II. 2 53-55.

of Bhārata-varṣa, which do not take place elsewhere in the same number, order and degree. But the *Kalpas* are not confined to a particular *Varṣa* or *Dvīpa*, They are universal.

A table of the computation of the Yugas, Manvantaras and their Kalpa is given below, which also indicates the age of the present universe according to the Purāṇas : our Earth might have come into existence a little later in this cosmological scheme. It may be seen that this Purāṇa or astronomical computation comes close to the modern calculation of the present age of the Earth according to the science of geology.

SRṢṬI KĀLA OR KALPA

(Manu-Smṛti 1.66 ff; Viṣṇu-Purāṇa, I. 3.8 ff)

360 human years	= 1 divine year
4000 divine years	= Kṛta (Satya) Yuga
400 divine years	= Kṛta-Sandhyā
400 divine years	= Kṛta-Sandhyāṁśa
3000 divine years	= Tretā Yuga
300 divine years	= Tretā-Sandhyā
300 divine years	= Tretā-Sandhyāṁśa
2000 divine years	= Dvāpara Yuga
200 divine years	= Dvāpara-Sandhyā
200 divine years	= Dvāpara-Sandhyāṁśa
1000 divine years	= Kali-Yuga
100 divine years	= Kali-Sandhyā
100 divine years	= Kali-Sandhyāṁśa
4 Yugas combined	= 1 Mahāyuga, or 1 Divine Yuga
1 Mahayuga	= 12,000 divine years
	= 43,20,000 human years
$71 + \frac{6}{14}$ Mahāyugas	= 1 Manvantara
14 Manvantaras or 1000 Mahāyugas	
	= 1 Day of Brahma
or	
The period of a Kalpa	
= 4,320,000,000 human years	

THE PRESENT AGE OF THE EARTH

The present Kalpa is the *Vārāha-Kalpa*, of which the following period has already elapsed:—

6 Manvantaras	= 1,85,14,28,574 human years
+ 27 Mahāyugas	= 11,66,40,000 human years (of the present <i>Vaivasvata</i> Manvantara).
+ 3 Yugas (Satya, Dvapara, Kali)	= 38,88,000 human years
+ Past period of Kali (28th)	= 5070 years (up to A. D. 1969).

Total Period elapsed = 1,97,19,61,544 years

This period may be taken, according to the Purāṇas, as the age of the present creation or *srṣṭi*. In the beginning the earth was only in the atomic form. It was in the womb of the cosmic water, and later on, it emerged from those waters as they gradually dried up by the Sun's rays, (that is what the episode of the *Prithivi-uddhāra* by God *Varāha* may indicate). So the real age of the present solid earth may be less than the above calculation of the present age of the *srṣṭi*, which surprisingly comes close to the geological time scale calculation as given below:

ORIGIN OF THE GEOLOGICAL

Eras	Periods and Systems	Derivation of Names
CENOZOIC Kainos or Cenos = recent Zoe = life (Recent-life)	QUATERNARY	
	Recent or Holocene } Glacial or Pleistocene }	Holos = complete Pleiston = most
	TERTIARY	
	Pliocene Miocene Oligocene Eocene	Pleion = more Meion = less Oligos = few Eos = dawn
		'cene' from Kainos = recent
	CRETACEOUS	Creta = chalk
	JURASSIC	Jura mountains
	TRIASSIC	Threefold division in Germany
MESOZOIC Mesos = middle (Mediaeval life)	PERMIAN	Permia, anc. kingdom E. of Volga
	CARBONIFEROUS	Coal-bearing
	DEVONIAN or OLD RED SANDSTONE	Devon (marine sediments) (Land sediments of same period)
	SILURIAN	Silures anc. tribe of Welsh border
	ORDOVICIAN	Ordovices, anc. tribe, N. Wales
	CAMBRIAN	Cambria = Wales
PALÆOZOIC Palaios = ancient (Ancient life)		
PRE-CAMBRIAN ERAS		
	PROTEROZOIC	Proteros = Earlier
	ARCHÆOZOIC	Archæos = Primæval
	EOZOIC	Eos = Dawn

UNRECORDED INTERVAL

ORIGIN OF THE EARTH

THE EARTH TIME SCALE*

Approximate dates in years	Distinctive Life
25,000 1,000,000	} Modern Man Stone-Age Man
15,000,000 35,000,000 50,000,000 70,000,000	} Mammals and Flowering Plants
120,000,000 150,000,000 190,000,000	} Reptiles
220,000,000 280,000,000 320,000,000 350,000,000 400,000,000 500,000,000	} Amphibians and Primitive Plant Fishes Invertebrates First appearance of abundant fossils
	} Scanty remains of Sponges and Seaweeds
at least 1,750,000,000	No direct fossil evidence of Life

Unrecorded Interval

at least 2,000,000,000

*This Geological Time Scale showing the date of the origin of the Earth has been taken from Arthur Holmes : *Principles of Physical Geology*, pp. 104-105. It has been kindly supplied by Dr. Arup Deb, Department of Geology, Banaras Hindu University, Varanasi.