Visnu Worship, Jayadeva and Vaisnavism in Orissa

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In the absence of authentic historical records, it is difficult to trace out the exact period of origin of Visnu worship and the spread of Vaisnavism in Orissa. Some archaeological evidence in support of worship of Visnu during the rule of the Mathar dynasty in Kalinga has come to light. The image of Visnu used to be worshipped as a two or four-armed deity. From a copper plate found in the village Sarsandha in the Parlakhemundi sub-division, it is learnt that Maharaja Visakha Verma (314-330 A.D.) of the Mathar dynasty declared himself as *Parama Daivata* and *Parama Bhattaraka Padabhakta* (Epigraphia Indica, Vol. XXI pp. 23-25).

It has been mentioned in the copper plate of Ananta Sakti Verman (392-426 A.D) of this dynasty that he was *Kamala nilayakranta Baksosa Narayana Svaminah Padabhakta* (Epigraphia Indica, Vol. XXVIII pp. 175 ff). The plate reveals that he was a devotee of Laksmi Narayana.

In the second copper plate of Maharaja Chanda Verman (426-441 A.D.) a mention has been made of the gift of the village Kohatra to the Brahman Brahmachari Devasarma on the 5th day of the lunar fortnight of the month of *Chaitra* (March-April) during the 6th year of his reign. He calls himself *Parama Bhagavata* in this copper inscription.

Maharaja Prabhanjan Verman II (521-536 A.D.) has in his Nigondi copper inscription, termed himself as *Bhagavata Swami Narayana Padabhakta* (Epigraphia Indica, Vol. XXVIII pp. 175 ff). From an inscription of 3rd century A.D. found in Nagarjun Konda, it is learnt that Narayana was regarded as *Parama Daivata.* The term *Daivata* is applicable to the sun. In the 1st and the 155-6th *sloka* of the *Rig Veda*, Narayana and Savita (Sun) are taken to be identical.

In the kindom ruled by the kings of Mathar dynasty there was the Mahendrachala (Mahendra hills). A district Mahendra Bhoga was created in the kingdom named after it. The wooden image worshipped by the *Savaras* on the Mahendra hills was worshipped by the kings of Mathar dynasty as the State deity. In course of time, this image of the tribal people was worshipped as Narayana or Purusottama. (*The Cult of Jaganath*, pp. 4-5 ff)

The territory lying between Kalinga and Tosali was known as Kangoda and it constituted one independent kingdom. The major portion of Khallikote in the district of Ganjam and a considerable portion of the present Khurda sub-division of undivided Puri district were included in this kingdom known as Kangoda. According to the Kanas copper plate of king Sri Loka

Vigraha of Vigraha dynasty of Kangod, he had issued royal orders from Tatichha Pattanam, a village in the district of Satid in Tosali to be Visayapati (Collector) and other officers of the State to the effect that the village *Urddhvasrnga* located in the same district was for the worship of Jaya Varaha gifted at the feet of *Parama Daivatadhi Daivata Parama Bhattaraka (*OHRJ Vol. IV p.6, p.233). There are two *sambats* mentioned in this copper inscription. The first one, if calculated according to Gupta era 200 may date back to 520 A.D. and the second calculated according to *Mana* to 240 A.D. But this has to be confirmed by further scientific research. Jaya Varaha mentioned in the copper inscription must certainly have been the Varaha Avatar of the ten incarnations of Srikrsna or Visnu.

After the defeat of Sasanka by Harsavardhan, Maharaja Madhav Roy (590-604 A.D.) conquered the kingdom of Loka Vigraha of Kangod and established himself as an independent king assuming the title *Sakala Kalingadhipati*. According to a copper inscription found in the Khurda region he introduced himself as *Sailodbhavanvavaya …… nata sakala Kalingadhipatyah sakala kalavapta kaumudeva jagata pramadah pravrtta chakra chakradharaiva Bhagavan Madhavah Sri Madhavarajah*. From another inscription, it is seen that Madhavaraja bore another name *Sri Sainyabhita*(O.H.R.J. Vol II Nos. 3 & 4, pp-20-24 ff).

During the reign of Madhavaraja the image of Visnu was worshipped in Kalinga under the name Madhava. In the densely populated region of the kingdom of Kangod and the adjacent old valley of the river Prachi, shrines of worship of Madhava Visnu were established. By the by it may be mentioned that the present Prachi valley comprising some parts of Sadar sub-division and Bhubaneswar of undivided Puri district, Sadar and Jagatsinghpur Sub-divisions of the district of Cuttack must have belonged to the kingdom of the then Nala dynasty named after Nalaraja ruled from a place Puskari near Nowrangpur of Orissa. Their predecessors had been ruling over Vidarbha territory. A rock inscription of 13 lines of Skandha Verman, son of Bhabadutta Verman of this dynasty is found at a little distance of the dilapidated Siva temple in the village Potagarh in the Umarkote taluk of the district of Koraput. In this inscription salutations have been offered to Hari at the outset.

"*Harinajitam jayati Jesyatyesa gunastutirnnahimsa, Nanu bhagavaneva jayajetavya chadhijeta cha".*

(Epigraphia Indica, Vol. XXI pp. 135 f).

Scholars are of opinion that this rock inscription belongs to the 5th century A.D. Skandha Verman had installed a stone slab with the foot prints of Lord Visnu engraved on it in a temple and worshipped it.

The Saravapuriya royal dynasty ruled over south Kosala. Mahasudeva Raj (6th century A.D.) bore the title of *Parama Bhagavata* as recorded in his Koutavalla copper plate. In his copper plate the image of Gajalaksmi (Goddess Laksmi with elephants) was engraved. The figure of Gajalaksmi was set on a full-blown lotus with two elephants on both sides sprinkling water.

After the reign of Saravapur royal dynasty, Mahasiva Tibira Deva became the king of the whole of Kosala. In his copper plate he declared himself as *Parama Vaisnava* (Odisara Itihas, p. 484). In the coins of the State the figure of Garuda, the conveyor of Visnu was engraved.

Tibira Deva ruled in the latter part of the 7th century A.D. His son Mahananna Raj was a devotee of Visnu and had conquered the kingdom of Utkal in the 9th year of his reign. In the copper

plates he has described the Brahmins as Bhagavata.

After Mahananna Raj Mahasiva Gupta Balarjuna became the king of Sakala Kosala. There are 42 verses of Mahasiva Gupta engraved in a long rock inscription of Siripur (EP Ind. Vol. XI pp. 184-202 ff). As it contains at the outset the expressions "*Om Namah Purusottamayah*", it may be considered the first inscription of its kind in 8th century A.D. The name of Jagannath as Sri Purusottama has been recorded for the first time. After this there are salutations to the Nrsingh incarnation, to Lord Krsna the destroyer of Kamsa and to Lord Balarama. It is clear from this that Mahasiva Tibira Deva and his fore-fathers of Pandu dynasty worshipped Sri Jagannatha, Laksmi, Nrsingha, Krsna, Balarama as their ancestral Gods. So the figure of Laksmi was engraved as the royal emblem.

As king of Sarava dynasty who ruled before the Pandu dynasty termed themselves as Parama Bhagavata, it is clear that Visnu worship was widely in vogue in south Kosala before 7th century A.D. It is learnt from another rock inscription at Siripur that Mahasiva Gupta Balarjuna, son of Sri Harsa Gupta (Swabhaba Tunga) and queen Vasata (daughter of Surya Verma) had engaged the florists of *Nabahatta* at Sripura to make beautiful garlands every day to be offered to Lord Visnu. In the Sambal region of Kosala, Indrabhuti (714 A.D.) in his work *Jnanasiddhi* has offered his salutations to Lord Jagannatha. In the lyrics or religious scriptures this mention of Lord Jagannatha is the first of its kind. The name of Lord Jagannatha did not find place in any scripture before this.

"Pranipatya Jagannatham sarvajina vararchitam,
Sarva Buddhamayam siddi vyapinam gaganopamam"

(*Jnansiddhi*, 1/1)

Indrabhuti is also known as the expounder of Vajrayana, a school of Tantrayana Buddhism. His sister Laksmikara and his adopted son Padma Sambhava went as far as Tibet on their assignment to preach this religion. Padma Sambhava is even now regarded as the founder of Tibetan Lamahood. The Sahajayana cult of Buddhism developed from the Mahayana cult. The bliss of inter-communion with God is transformed to *Maharasa*. In this *Maharasa* the soul merges in Brahma. Indrabhuti has offered his oblations to Lord Jagannatha as the deity worshipped by the *Mahajinas*. Among the ten incarnations, the incarnation of Buddha is taken to be Lord Jagannatha Himself. On the left walls of the *Bhogamandapa* behind the Garuda pillar inside the temple and upon the upper part of the Lion's gate (*Singhadvara*) in the engravings of the ten incarnations the image of Lord Jagannatha is substituted later in place of Buddha which is highly meaningful though objectionable. The Oriya literature also sings of the glory of Buddha, as an incarnation of Lord Jagannatha. Instances of this can be found in the figures pictured on the old palm-leaf scriptures of Orissa. It is believed that the stuff placed in the navel part of Lord Jagannatha which is regarded as *Brahma*, is the tooth of Buddha. But some others believe it to be the unburnt navel portion of Srikrsna.

Hiuen Tsang has in his account described the Buddhist Burma region as Sriksetra. Puri, the abode of Lord Jagannatha, is also termed as Sriksetra. Consequent upon the spread of Sahajiya Buddhism, people of the lower castes of the society were attracted to it. This led to a mixture of Brahmanism and Buddhism. Almost at every home Buddhist pillars set up earlier got converted to bases of *Tulsi* plants and worshipped daily. These were converted to *tulasi chaura* and they were widely spread to all parts of India. In this way Buddhist consciousness

merged into the vast arena of Hinduism and gave rise to the development of a new religious order.

It is ascertained from Daspalla copper plate that Sri Satrubhanja Deva Tribhuban Vilas, the king of Visnubalka was a great devotee of Vaisnavism. In the copper plate there is mention of the name of a village Santosa Madhava. This copper plate belonged to Bhauma era 198 or 812 A.D.

During the reign of Bhaumakara dynasty, Tribhubana Mahadevi, the chief queen of Santikar I (846 A.D.) termed herself, in a copper plate inscription, (Ep. Ind. Vol. XXIX pp. 210-220 ff) as *Parama Vaisnavi Parama Bhattarika-Maharajadhiraja Parama Paramesvari*. Subhakar Dev II (836 A.D) bore the name of *Singhadhvaja* or *Singhaketu* and was a great patron of Buddhism. But from his Hindol copper plate it is confirmed that he also sang the glory of Laksmi-Narayana and Chandrasekhar (p. 450, Odisa Itihas). His other name was Ramdev.

Madhavi Devi, the chief queen of Subhakara Deva, had built the Madhavesvar temple on the mountain top of Udayagiri. The verse "*Khyatoayambhuvi Madhavesvara iti Sriman Bhavasyalayam"* (p. 447, Odisa Itihas / Neulapur copper plate Ep. Ind. Vol. XV pp.1-8 ff). has been inscribed on the wall of the Hamsesvar temple. As her husband Subhakar Deva posed himself as a great worshipper of *Parama Saugata* (E.I., Vol XV pp 1-8), it can be assumed that he was a patron of Buddhism. But Maharani Madhavi Devi having already built the temple of Madhavesvar also established many shrines of Visnu worship which shows her religious tolerance and patronisation of Brahmanism. This resulted in a strange co-ordination of Brahmanism and Buddhism. Side by side with the worship of Buddhist gods and goddesses, the worship of Madhava spread far and wide in Orissa.

In the east of the Mahendra hills adjacent to the southern part of the kingdom of Kangod, there was an independent kingdom named Svetaka. After the kings of Sailodbhava dynasty, the kings of Ganga dynasty of the city of Kalinga conquered the southern territory upto the river Rsikulya. In course of time the Svetakas mingled with the Bhauma kingdom and established themselves as feudatory chiefs of Bhauma kings. According to Sankhimedi copper plate, Maharaja Indraverma of this dynasty had gifted a village for worship of Loka Madhava Visnu and Svayambhukesvara Visnu and Siva and had appointed some Brahmins to take care of the rites of worship. Among them were Somapa and Savaripa the great saints.

It is learnt from a copper plate of queen Tribhubana Mahadevi (895 A.D.) found from Boudh that after the death of her husband Lalitabhara, she took over the charge of the administration of the kingdom. The Chedi king Laksman Raj conquered the kingdoms of Kosala and Udra and carried away from the latter the valuable Kaliya image beset with gold and jewels as ascertained from Bilhari rock-inscription.

"Jitva Kosalanathamodranrpateraptastu yah kaliyo,
Ratna svarnamayah sa yena vihita somesvarabhyarcchanam"

(Ep. Ind., Vol I, p. 256 ff)

From this it is learnt that Laksaman Raja had stolen away the image without encountering Udra Raj in a battle. This incident took place during the reign of Kosala king Janmejay Mahabhava Gupta Svabhava Tunga and queen Mahadevi Tribhubana. To take revenge, Janmejaya waged a war against the Chedi king and burnt his territory to ashes. This has also been mentioned in the copper plate of Yajati, son of Janmejay found in Bolangir Patna. (Odisar Itihas, p. 459). Probably the Chedi king Laksaman Raj was living in the 10th century A.D.

But what is this Kaliya image spoken of above ? It may probably be either the Kaliya-Dalana (killing of the serpent Kali) posture of Lord Srikrsna or the image of Lord Jagannatha (black in colour) adorned with gold and jewels.

Maharaja Yajati II of Soma dynasty became the king of Kosala, Kangod and Utkala and built the temple of Lord Lingaraj known then as Kirtibaseswara at Bhubaneswar. Though he had made the preliminary arrangements for construction of the temple of Sri Jagannatha, he could not implement it. It has been mentioned in the *Madala Panji* (chronicle of important events in Jagannatha temple) that 146 years before Yajati, Lord Jagannatha was buried underground at Sonepur (Suvarnapur) in fear of the invasion of Raktabahu. Yajati Kesari had unearthed the divine images and had reinstalled them at Puri. Afterwards, the Ganga emperor Chodaganga Deva had built the present lofty and majestic temple. It is generally believed that one Lalatendu Kesari had built the Lingaraj temple of Bhubaneswar. But history does not record any such name. Though the kings of Soma dynasty were Saivas themselves, they made equally sincere wholehearted efforts for establishing Visnu worship.

The images of Nila Madhava and Sidhesvara Siva Linga at Gandharadhi near Boudh situated at the south-valley of the river Mahanadi were probably constructed in eighth or ninth century A.D. The simultaneous worship of Lord Hari (Visnu) and Hara (Siva) in the same part of the country bears ample proof that in the Kosala region these two worships had long been in vogue concurrently. Similarly the image of Laksmi Nrsingha inside the Lingaraj temple walls at Bhubaneswar symbolises joint worship of Vaisnavism and Saivism at this holy place of pilgrimage. On the western border of the Boudh town, the temple of Ramesvar Visnu is built. Close to this there are two small temples which may date back to 9th century A.D.

In the district of Dhenkanal near Talcher, the biggest image of Lord Visnu in India is found in a sleeping posture. From tip to toe it is 41'.5" feet in length. Historians are of opinion that the construction of this image may date back to 8th century A.D. In the Svarna Jalesvar temple at Bhubaneswar built in the 7th or 8th century A.D., the beautiful figures of Saptasala Chhedan of Sri Rama and crushing of the Kaliya serpent by Srikrsna are found. The Kaliya Dalana image of Srikrsna has been preserved in the State Museum at Bhubaneswar.

To the south of the Lingaraj temple built during the reign of the Soma dynasty there are engravings of figures of Nanda, Yasoda and baby Krsna. Such figures have been engraved in a small temple at the north-east corner of the Brahmesvar temple at Bhubaneswar. In this picture Nanda has beard and Yasoda is seen churning curd and baby Krsna found to be curiously watching it. During the reign of the same Soma dynasty an attractive image of Lord Visnu has been installed at Jalauka near Chhatia in the district of Cuttack. Thus Viasnavism was in vogue in present Orissa for more than eight centuries before the advent of Ganga dynasty.

At the advent of the Ganga dynasty, Ananta Verman Chodaganga Deva (1078-1174 A.D.) at first worshipped Gokarnesvar installed on Mahendrachala (Mahendra hill). In this connection, it has been discussed before that on the Mahendra hill the indigenous *Savaras* had been worshipping the wooden image which was considered to be their State deity by the kings of Mathar dynasty. It is learnt form the Korne copper plate that through the influence of his ancestral preceptor Ramanuj, Chodaganga Deva was

attracted towards Visnu worship. His copper plate says that at the beginning of his reign he had built the temple of Laksmi Narayan at the sea shore.

"Laksmi janmagrham payonidhirasau sambhavitasyasthitira Nodhanni svasurasya pujyata iti ksirabdhi basaddhrvam, Nivignah purusottamah pramuditasta damalabhadrama Baitad bhartrgrham baram pitrgrhat prapya pramodanvita".

There was an old temple of Lord Jagannatha at Jagannath Puri which was in a dilapidated condition and Chodaganga Deva renovated this old temple and rebuilt it totally. This is supported by the description in Vaisnava Lilamrita composed by Madhav Patnaik in the first part of sixteenth century during the reign of Gajapati Pratap Rudra Deva.

The same temple which had been built for installation of Laksmi Narayan is now the temple of Lord Jagannatha. It is Purusottama who is also Lord Jagannatha. Since the reign of Chodaganga Deva, Visnu worship got widely spread in Orissa as he got the worship instituted with all the arrangements physical and financial. That became the model for other princes of Orissa to construct Jagannatha temple and provide land for their puja. Purusottam Puri, the abode of Lord Jagannatha was the centre of Visnu worship and Vaisnavism. After the preaching of Advait philosophy by Sankaracharya, there appeared on the scene Madhvacharya, Visnusvami, Ramanujam and Nimbarka the preachers of Dualism. For propagation of their own teachings they had established several shrines at Puri. From the ten slokas composed by Nimbarka, it is learnt that he was a staunch supporter of the worship of Radha-Krsna. The fifth of these ten slokas reads as follows :

"Angetu vame vrsabhanujam mudabirajamana manurupasaubhagam sakhisahasreih parisebitam sada amarema devim sakalestakamadam".

(Sri Jayadeva O Sri *Gitagovinda*, p. 147)

It means that Radha the daughter of Vrsabhanu who resembles Laksmi and is ever blissful sits on the left of Srikrsna surrounded by thousands of mates devoted to her service. She, who is the bestower of peace and grants all desires, is ever memorable and worthy of devotion and worship. The followers of Nimbarka are of opinion that Srikrsna is the beloved of the Gopis and Radha resembling Laksmi is conjoined with him as his pleasing counterpart. But the conjoined image of Radha and Krsna as conceived by Nimbarka has not yet been discovered. Nimbarka has prepared a commentary on the principles of Vedanta named '*Vedanta Parijata Saurabha*'.

After this in the middle of the 12th century A.D. the *Gitagovinda* of Sri Jayadeva considerably influenced the common people in Orissa. The sweet and melodious verses of the *Gitagovinda* based on the blissful divine union of Radha and Madhava resounded all around and even penetrated to the distant interiors of Orissa and India. The influence of Vaisnavism on the then society in Orissa and the inspiration derived from dualism might have prompted Jayadeva to compose the love episode of Radha and Krsna. Though there was an impact of teachings of Buddha and Nimbarka in the mind of Jayadeva, his *Gitagovinda* was unique in its own way and invoked devotional and enchanting feelings in the hearts of the common mass of Orissa. In latter times literature, music, art and architecture in Orissa were greatly influenced by the *Gitagovinda* .

The four-armed image of Madhava-Visnu holding the conch, wheel, mace and lotus, with Krsna consciousness installed into it, was subsequently found to be holding the conch and the wheel in upper two hands and the flute by the lower two hands. This image in the pose of standing in triflection is adorned with the engraving

of ten incarnations all around. Among such type of images in Orissa one found in Dharmasala of Cuttack (now in Jajpur district), has been preserved in the Orissa State Museum, Bhubaneswar. Of the other images, one is preserved in the Jagannatha Ballabha *matha* and another in the Gouranga m*atha* at Puri.

The intense devotional ardour contained in the *Gitagovinda* of Jayadeva brought in course of time, the transformation of the image of Madhava to that of two armed Krsna with flute. Gradually, this image assumed the form of Krsna-Gopinatha with two arms holding the flute and was worshipped all over Orissa. The mode of sculpture of the image of Krsna-Gopinatha all over Orissa resembles that of Ksirachora Gopinatha of Remuna in the district of Balasore.

Close to the village Kenduli, the birthplace of Jayadeva, in the villages of Balianta, Sarkana, Hirapur, Naharakanta and Barimund in the undivided Puri district, Nagari, Adaspur and Varahapur in this sadar sub-division of Cuttack district such types of images are installed and worshipped. In the Brahmin *sasanas* near Puri the images of Gopinatha are worshipped but the image of Krsna with two hands is without his counterpart Radha. The date of sculpture of these images may be in the later part of 12th or the middle of 13th century A.D. In the Alarpur copper plate of the emperor Narasingha Deva IV, there is mention of installation of three images of Gopinatha at (1) Alarpur, (2) Sarkana and (3) Hirapur. (Alarpur plate of Narasingh Dev II E.I, Vol XXI, No. 3 pp. 17-24)

Again *Maharani* Chandrika Devi, the daughter of Anangabhima Deva II (1211 -1238 A.D.) of 13th century A.D., was a devotee of Lord Visnu. On the eastern bank of Bindusagar Tank of Bhubaneswar, she built the temple for worship of Ananta Vasudeva and Subhadra and mentioned this in a long rock inscription set in the temple which records as follows :

"(i) Krsnena trsnavati (6th sloka),(ii) tathirtha mandanasyasya tire nanavani ghane, Srikrsna, Sribalavasa vasite nandanayite (13th sloka) (iii) mukuta dairalankaraih saktya bhaktya mudanvita, balakrsnau subhadrancha sreyasesa vabhusayat".

The rock inscription referred to above has been removed elsewhere. In its place, some one hostile has set up a rock inscription of Bhavanatha, the king of Burdwan.

Images resembling those of Krsna, Balaram and Subhadra in the Ananta Vasudeva temple are found in *Kaliyuga* Bagalpur and Shisilo (Sri-Shailo) near the village Kenduli. This has also been discussed elsewhere.

Due to popularity the *Srimad Bhagavat* had earned among the people in Orissa, Sridhara Svami has prepared a commentary on it. Sridhar Svami belonged to the village Maraigarh at a distance of 4 kilometres from the temple of Ksirachora Gopinatha at Remuna in Balasore district. This village Maraigarh was a *sasan* of Brahmins belonging to the 'Paipalada' cult of the *Atharva Veda*. In the *Atharva Veda* there are many verses of the *Tapini Upanisad* containing descriptions of Krsna, Radha, Vrndavan etc.

It was in Orissa that the *Tapini* literature originated and influenced the growth of Vaisnava Bhagavata in Orissa. As a result, Visnu was worshipped as Krsna or Gopinatha. After the propagation of image worship in Orissa, the *Gitagovinda* of Jayadeva was composed and got wide circulation in Vaisnava literature. The worship of Radha was not in vogue from 13th to early 15th century in Orissa or Bengal. It has been mentioned in the *Chaitanya Charitamrta* by Krsnadas Kaviraj in the 17th century A.D. that

Sri Chaitanya used to listen to the *slokas* of the *Gitagovinda* and songs of Chandidas and Vidyapati recited to him by Ray Ramananda.

Vidyapati Chandidas Sri Gitagovinda
Bhabanurupa sloka padhen Ray Ramananda
(Anta Lila)
Vidyapati Jayadeva Chandidaser gita
Asvadena Ramananda Svarupa sahita (Adi Lila)

Sri Chaitanya stayed at Rajamahendri on the bank of the river Godavari with Ray Ramananda, for ten days. Ray Ramananda explained to him in details, the philosophy of Vaisnavism and the cult of Radha-Krsna or Gopinatha. He explained to him the texts of the *Srimad Bhagavat, Brahma Samhita, Srikrsna Karnamrta* and *Gitagovinda*. Radha tatva or marga is the best way of worshipping Krsna and Sri Chaitanya learnt it from Ray Ramananda according to the *Vaisnava Lilamrta* of Madhava Pattnayak. It, therefore, goes without saying that nobody before Chaitanya in Bengal had heard of the *Gitagovinda*. Had the *Gitagovinda* spread before in Bengal, a saint like Sri Chaitanya would have surely heard of it earlier.

According to the *Chaitanya Charitamrta* Madhavendra Puri had at first installed the image of Gopal-Krsna on Govardhana Giri. On his way from Vrndavana to Puri he had spent a night in the temple of Gopinatha at Remuna. Legends say that Gopinatha himself had stolen the cream to feed his devotee Madhavendra and hence the image of Gopinatha was popularly known as Ksirachora (Stealer of milk cream) Gopinatha.

After Madhavendra Puri, Sri Chaitanya visited Vrndavana. While returning from Vrndavan, Sri Chaitanya had left instructions with Rupa *Gosvami* and Sanatan *Gosvami* for restoring Vrndavan to its former glory. It has been mentioned in the middle part of *Chaitanya Charitamrta* that these two saints made sincere efforts, for reviving Vrndavana. The deities of Madana Gopal and Govinda in Vrndavan were installed by Sanatana and Rupa *Gosvami*. But the image of Radha had not been installed at that time. Madhavendra Puri had installed there the baby Krsna on *Giri Govardhana*. It was Bal Gopal.

Sanatana and Rupa *Gosvami* had met at Vrndavan Jiva *Gosvami*, Raghunatha Bhatta, Gopal Bhatta and Raghunatha Das. These six saints are known as six *Gosvami*s. They made strenuous efforts to turn Vrndavan to a holy and finished the composition of *Chaitanya Charitamrta* in 1615 A.D. and in this scripture there is no mention of worship of Radha with the images of Madan Gopal and Govinda. So it is certain that worship of Radha had not been introduced by the six *Gosvami*s at Vrndavan. In the *Chaitanya Chandrodaya Nataka* written in 1579 A.D., there is mention of the conjoined images of Radha and Krsna. In the 7th chapter of this play, Sri Chaitanya has enquired from Ramananda regarding the deity worthy to be worshipped. In reply Ramananda said that it was proper to worship the conjoined image of Radha and Krsna.

Bhagawan (Sri Chaitanya) : *Kimpasyamatra ?*
Ramananda : *Mahasi Srikrsna Radhamedhe*

In the *Brahma Vaivarta Purana* there is mention of the marriage of Radha and Krsna. As described in the *Purana* the marriage of Radha and Krsna had been performed before the marriage of Yasoda's brother Ayana. It is peculiar that Yasoda's brother Ayana in the literature of Bengal and other places in India is known as Chandrasena in Oriya.

"Maharaj, sa khalu sahaja vaisnava bhavati Purvamayamasmakamupahasapatra masita samprati bhagavadanugrahe jate tanmahimajnata no yata".

(Maharaja, he is follower of this Sahaja cult of Vaisnavism. Previously he was a person of ridicule by us. Now being favoured by Bhagavan we are apprised of his power.)

(Souvenir on Jayadev-1968 Page 59 published by J.S.P., BBSR)

On his way to Puri, Sri Chaitanya witnessed the images of Gopinatha with flute in hand at Remuna, Cuttack, Balianta, Hirapur, Sarkana, Danda Mukundapur worshipped. All these discussions go to prove the fact that the worship of the image of Gopinatha was widely in vogue in Orissa. As mentioned earlier, the Allarpur copper plate inscription of Narasingha Deva II of Ganga dynasty (1238-1264 A.D.) throws light on this.

After composition of the *Chaitanya Charitamrt*, Narahari Chakravorty in his *BhaktiRatnakara* has recorded the achievements of Vaisnavas of Goudiya Branch. This work belongs to the 18th century A.D. and it records that the image of Radha was taken from Utkal and was installed beside Madan Gopal and Govinda at Vrndavan. In the 6th chapter of *Bhakti Ratnakara* the following verses are found :

"Sri Govinda ye samaye prakata hoila, Se samaya srimati Radhika nahin chhila Chhilen Sri Madanamohan prabhu echhe Sanmksepe kahiye sri jugal haila jaichhe

The above verses prove that the image of Radha had not been worshipped earlier beside Madanamohan and Govinda.

According to *Bhakti Ratnakar* a Brahmin of south India named Vrsabhanu was living at Radhanagar in Utkal. He had installed the image of Radha as his daughter. After the death of the Brahmin, the Gajapati emperor, on receipt of the news, came to Radhanagar and witnessed the image of Radha, who appeared before the Gajapati emperor of Utkal in a dream and instructed him to place her in the *chakrabedha* of *Srimandira* compound. After her installation in the *Srimandira* compound, when the time of her retreat to Vrndavan came, she again appeared in a dream before Gajapati emperor Purusottam Deva and directed him to send her image to Vrndavan. So the image of Radha was removed to Vrndavan where it was installed on the left of Govinda. These stories have been recorded in the *Sadhana Dipika*. Again it has been mentioned in the 13th chapter of the *Bhakti Ratnakara* that Jahnavi Devi, the wife of Nityananda had installed the image of Radha beside Gopinatha at Vrndavan. There is a place named Radhanagar close to Kisnanagar (Krsnanagar) in the district of Cuttack. Similarly, there is another place named Radhanagar at Remuna near the temple of Ksirachora Gopinatha. These two villages are kin to Radhanagar mentioned in the *Bhakti Ratnakar* and might have been the centre for origin of Radha worship. But there is absolutely no truth in these stories.

Purusottama Jena of *BhaktiRatnakar* was the Gajapati emperor Purusottam Deva (1607-1623 A.D.) of Bhoi dynasty of Khurda. Rasikananda is considered to be the expounder of joint worship of Radha and Krsna. But he appears to be ignorant of the image of Radha of Radhanagar, its installation in *Srimandira* compound and its transport to Vrndavan. But surely enough the joint worship of Radha and Krsna had its origin form Orissa. In the 17th century A.D. it was carried to Vrndavan and from there it spread all over India.

The greatest mission of Sri Chaitanya was the revival of Hindu culture and restoration of Vrndavan *Dham*. The strenuous efforts which the six *Gosvamis* had made for the revival of Vrndavan has been stated before. With a view to preaching Vaisnava literature and the Gospels of

Vaisnavism at Gauda and Utkal, these six *Gosvami*s had deputed Narottam Thakur, Srinivas Acharya and Syamananda to the eastern of India. While carrying the palm leaf scriptures in a bullock cart, these were robbed away on their way near Bankuda and were rescued by Vira Hamir, the then king of Visnupur. This incident took place during 1600-1605 A.D. up to which Jiva Gosvami was alive.

Syamananda was commissioned for preaching Vaisnavism in Orissa. He enlisted Rasikananda Deva *Gosvami* as his disciple which represented the Syamananda school of the cult of Vaisnavism. One Baladeva Vidyabhusan of Orissa belonged to this school. During the plundering raids of the Moghul emperor Aurangzeb on Hindu images and monuments, the images of Vrndavan were transported for safety at Galta in the kingdom of Ambar in Rajputana and preserved there. Sawai Jayasingha, the king of Ambar (1699-1743 A.D.) had built the city of Jayapur in 1728 A.D. and removed his capital there. Jayasingha belonged to the Syamananda cult and was an avid worshipper of Radha-Krsna. But the Vaisnavas of south India who were believers in the *Vedanta* Philosophy were opposed to worship of Radha beside the image of Krsna. Jayasingha and the supporters of Radha-worship failed to prevail upon the Vaisnavas of south India for worship of Radha. As a result, Raja Jayasingha recorded his discourses on Radha-worship and invited the learned saints of Vrndavan for a discussion on the matter. At that time Visvanath Chakravarti was the head of the Gaudiya cult of Vaisnavism. But due to advanced old age he could not come to Jayapur and deputed Pundit Baladeva Vidyabhusan of Orissa, another exponent of Gaudiya Vaisnavism.

Baladeva Vidyabhusan was born near Remuna in the district of Balasore of Orissa. He had acquired vast learning on Vaisnava literature and on Radha worship. He joined the religious conference of the Pundits at Jayapur and listened carefully to the arguments put forth by the scholars of the south against the worship of Radha. He had composed the *Govindabhasya* (*Bhagavat Gita* and *Dasopanisad*) which he presented at the conference of the scholars putting forth sound and logical arguments in support of joint worship of Radha and Krsna. This convinced the scholars of the south and they had to accept both Radha and Krsna as the obverse and converse of one and the same reality. Since then the joint worship of Radha and Krsna spread like wild fire in the whole of India.

To sum up, Nimbarka, is the first propagator of Radha-Krsna worship in India and no definite date or place of birth of Nimbarka is available. He came to Orissa, stayed in Puri and established an Asram there which still exists.

Late Dr. J.N. Banerjee in his work *Panchopasana* recorded that Nimbarka or Nimbaditya was the founder of the Sanaka *Sampradaya*. In a place Nimba or Nimbapur in south India, Nimbarka was born in a Brahmin family. The religious life of Nimbarka was spent at Vrndavan and at Puri. He preached Vaisnavism based on the conception of the theory of Radha and Krsna. He prepared a short commentary on the *Vedanta Sutra* called the *Vedanta Parijata Saurabha* and his teachings were embodied in ten verses known as *Dasaslokis*. The main deities of worship of the disciples of Nimbarka and Sanaka *Sampradaya* were Gopijana-Vallabha-Gopalkrsna and His beloved counterpart Srimati Radhika. From these discussions it is learnt that the worship of Radha-Krsna dates back to the 12th century A.D. But, no image representing the then worship of Radha-Krsna has been discovered so far.

Probably the name Radha has been borrowed by Nimbarka from the Sanskrit scripture *Dhvanyaloka* and *Suvasita Ratnakara*. The scripture *Sadukti Karnamrtam* by Sridhara Das was finished in 1205 A.D. But no definite mention of either the name of Jayadeva or Nimbarka has been made in it. No contemporary writing regarding worship of Radha-Krsna as propagated by Nimbarka has come to light so far. Therefore, it is clear that the credit of popularising the joint worship of Radha Krsna and the Radha *Bhakti* as the way to get Krsna goes to Jayadeva's *Gitagovinda*.

Vallabhacharya and Sri Chaitanya were contemporaries. Vallabhacharya was born in 1479 A.D. and lived upto 1531 A.D. Sri Chaitanya took his birth in 1485 A.D. and passed away in 1533 A.D. Vallabhacharya had discourses with Chaitanya at Puri on the commentary of the Bhagavata. Vallabhacharya had also attempted to introduce the worship of the joint image of Radha and Krsna.

The twin images of man and woman discovered from the pillar of Pahadpur in West Bengal are believed to be the images of Radha and Krsna and are considered to belong to the 7th century A.D. In the Annual Report of the Archaeological Survey of India published in 1923-27, the then Director of Archaeological Department, Roy Bahadur K.M.Dikshit has accepted them as images of Radha and Krsna. Dr. Suniti Kumar Chatterjee has accepted the female image as Radha. Dr. Sukumar Sen has taken the woman image to be that of a Gopi. But the historian S.K.Saraswati in his book '*Early Sculptors of Bengal'* published in 1937, has discarded the idea of treating these images of man and woman as those of Radha and Krsna. He says that the male image without the peacock feather on its head and the flute in hand cannot be taken as Krsna. It is not known how this idea spread among the people. So this can never be a fact that the twin stone images discovered at Pahadpur of the 7th century A.D. were those of Radha and Krsna. We are yet to come across any image of Krsna in India without these symbols of peacock feather or flute. Worshipping of a female goddess is as old as Mahenjodaro and Harappa in Pakistan and therefore, any twin image of man and woman joint cannot be taken to be that of Krsna and Radha. If it is taken that Radha and Krsna worship pervailed in Bengal from the 7th century A.D., then there would have been numerous such twin images found out by now. Krsna was not known as Madhava in Bengal till the 16th century A.D., when Chaitanya came.

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The Philosophy of the Gitagovinda

Prafulla Chandra Tripathy

Srikrsna is the *Parama Purusa* and Srimati Radhika, his loving consort is the *Prakrti*. She is termed as *Para Prakrti*. In Sanskrit as well as in Oriya '*Para*' means 'another' or 'other'. According to our scriptures the word 'Para' also refers to Srestha or Supreme Chief which is *Purusa*. So *Prakrti* is always at work to please *Purusa*. She has completely surrendered her heart and soul for the satisfaction of *Purusa*. But *Purusa*, though feigning indifference, is pleased at heart and charmed at the selfless love and restlessness of *Prakrti* to please Him. The whole creation is immersed in everlasting joy at this sweet selfless and blissful intercourse between the *Purusa* and *Prakrti*. *Prakrti* is always eager to execute the longing of her beloved in the phenomenal world for which she is very swift, agile and always on at her heels. Though enjoying the full bliss of being merged with *Nirguna Purusa*, she does not have the slightest trace of desire. She merges completely with *Purusa*. The whole creation is transformed to Vrndavana, the place of sportive union of Radha and Krsna. *Prakrti* goes into *samadhi* while in communion with *Purusa*. The playful and loving activities of *Prakrti* move her beloved counterpart *Purusa* who is overwhelmed with intensity of divine love and forgetting his consciousness entreats Radha, the *prakrti*, with the expression *"dehi pada pallavamudaram"*.

At the advent of spring *prakrti* in form of nature throbs with new life and inspires the whole creation. She has assumed this inspiring form for the pleasure and happiness of *Purusa*. In the words of the poet *Prakrti* is "*rtunam kusumakarah"*. Having adorned the bosom of the blue-coloured Lord with all that is best and pleasing, the every playful *Prakrti* merges herself with *Purusa* and it is this blissful conjoined union of *Purusa* and *Prakrti* which has been transformed into the heavenly inter-communion of Radha and Madhava. The *Vasanta Lila(Rasa)* as described in the *Gitagovinda* is only a spark of the eternal *Lila* of Radha and Madhava going on infinitely. On the infinite powers of God the main three are : 1. *maya*, 2. *svarupa*, 3. *tatastha*. By His *mayasakti* God has created the world, *Svarupa Sakti* is that with which he rests in the eternal *lila* and by His '*tatastha*' power the universe is regulated and governed.

The *svarupa sakti* again can be divided into three composites i.e. *sat, chit* and *ananda*. The term '*sat*' means real and existing for ever meaning he who always exists. The entire world is His manifestation. God being the ultimate source of power lends a spark to others and creates them. This is what is known as *sandhini* power of God. '*Chit*' means intellect knowledge, wisdom and consciousness. From the continuous

flow of his wisdom or consciousness a particle of consciousness has come down to this world making it aware of itself conscious. He is the Supreme of all consciousness. He makes others conscious by His own power. This is known as *sambit* power of God. Lastly God is *ananda* or bliss incarnate. *Ananda* means joy, delight and bliss. All bliss owe their origin to God. The animate world feels pleasure or *ananda* only through His grace. The power with which He delights others, is known as the *alhadini sakti* or the pleasing power. As the soul is in constant communion with God, he feels the pleasure and there lurks in his mind a thirst for enjoying the bliss of life. But due to spell of *maya* or illusion, he forgets. It is God who feels the pleasure and pain in the creation in form of man. By reaching *Brahma*, the embodiment of permanent bliss the thirst of soul for real joy and happiness is quenched. So the *Upanisads* say *"rasovaisati, rasam habyam labdhanti bhavati"* . In other words soul enjoys the fullness of heavenly joy by obtaining the grace of God, the source of permanent bliss.

Every *jiva* or soul pines for testing the pleasures of life. But to taste the bliss of life, one should intensify his feelings for divine love of God. When the feelings for love of God are intensified this is known as *bhava*. Unless *bhava* is awakened at heart, it is not possible to realise God and His bliss. The permanent joy and happiness which one derives by communion with God is termed as nectar and is far above the so called happiness and material comforts of the material world. When *bhava* grows intense it turns into *mahabhava* which links the self with the Supreme Self of God. We cannot hope for the grace of God for ensuring the fulfilment of our worldly desires. But on the other hand we should be prepared to sacrifice all we have in a selfless spirit to gain Him. Love of God should be cultivated at heart for the sake of God and not for any ulterior motive. The great poet Jayadeva has mentioned in the *Gitagovinda* :

" Hariravimani rajaniridani miyamapijativiram
kurumamavachanam sattvara rachanam
purayamadhuripukamam"

(*Gitagovinda* –11-7)

It is Krsna who is *Madhuripu*. His will is the only truth. The *jiva* or soul should exert himself heart and soul to fit into His divine will. One who is deeply engrossed in the material comforts of the world can hardly think of God. So the *jiva* or soul should proceed cautiously on the path of spiritual discipline and sing and hear the glorious *lila* or activities of God with a purified heart free from worldliness and then obtain His grace.

Love is supernatural and God is love incarnate and the only source of Divine joy. This world has been designed by God, as a universal school of love. Love is divinely bestowed upon man. Out of ignorance the *jiva* or soul cannot realise that feelings of Love are the gifts of God which lead him to the kingdom of heaven. Love is the essence of His creation. The Lord or Purusottama appears as the universe with the nectar of divine love and his loving manifestation in every object of this phenomenal world turns it to a paradise.

God exists both within and without the animate world. The primary stage of Divine Love is *bhakti* or intensive yearning and restlessness for God which ultimately leads the *jiva* to the bosom of God. By His will this universe is ocean of love. This instinct of love which God has bestowed on his creation, should be fully utilised by the *jiva* to reach the summit of God-realisation and enjoy perpetual Love. The aspirant who is mad for this Divine Love shall consider the material world as vile dust polluted with the most disagreeable stuff. In order to achieve the God in himself one should practise *karmayoga,*

jnanayoga and *bhaktiyoga*. For this, many saints and sages in the past had to undergo most severe yogic penance and austerities to be blessed with love of God. It is a pity that some others do not have the rudimentary conception of God and the divine love. They equate love with carnal desire. God has created this world for His *lila*. As long as there is the creation this continuous flow of Divine Love will enliven the heart of every living being wherein the seed of love shall germinate.

Unless the desires of the mind are completely annihilated, love of God can never be acquired. Spiritual austerity is the only way to put a stop to the desires of the mind. Desirelessness leads to acquisition of love of God which in course of time is transformed to *mahabhava* that merges the soul with the Supreme Self or *Brahma*. The *gopis* had gained this desirelessness of mind through varied modes of spiritual discipline and penance as a result of which they were blessed with co-union with God. It is very difficult to discriminate between one's desire and the will of God without purification of heart. Many believe their own desires to be those of the Lord which only exposes their foolishness. One can hope to realise the will of God if he reaches the level of the *gopis* in the plane of selfless love for God and to enjoy the bliss of Gods' grace even without any spiritual penance. This is the real *samadhi* which is possible only due to passionate and intense love for God.

The *Rasalila* of God marks the climax of divine love. It is this love which has been transformed to *ananda* or eternal bliss. To love God and His creation is what is known as *prema* or divine love. Attachment to sensual objects of this material world is *Kama* or lust whereas attachment to God is termed as love. *Kama* or lust leads the *jiva* to darkness of ignorance whereas love for God shines out like the sun dispelling darkness. In the *Rasalila* of Vrndavana, lust or carnal delight was controlled and diverted to blissful eternal love of God. In the scriptures *Madana* is considered to be the god of Love. As he originates from mind, He is known as *manasija*. Mind is always fickle which sways between real and unreal tendencies. In the ordinary sense *kama* or lust that is physical intercourse and real love as some say cannot be conceived separately in this world. Instead of curbing *Madana*, the God of love, his blessings are to be invoked for diverting the lust towards inter-communion with God to attain perfection in life. It is *Rasalila* itself which is love incarnate free from any sexual tendency. This represents the very soul of the *Bhagavata* and the *Vedanta*.

The essence and the principles underlying the conception of Radha and Krsna should be studied first before coming to the *lila* itself. In order to understand and assimilate the *lila* of Radha and Krsna as described in the *Gitagovinda*, one should first try to conceive at heart the philosophy of life in the context of self and the Supreme Self and the connective link in between. It is difficult to follow the importance of the *lila* without a purified heart. So this is known as *achintya bhedabheda*.

Srikrsna who is omnipotent and omnipresent is the sole guide of this creation. His peerless blue-coloured body resembling the black clouds embodies numberless stars and planets which are governed by His direction. Can any body expect to conceive Him or win Him who is so powerful ? Yes, He can be conceived and won over only by love or selfless and passionate yearning for Him. Unlike the sages who underwent great spiritual penance and physical privations, a devotee can attract Him by virtue of intensity of *bhava* or *mahabhava* termed as *prema*, the highest spiritual stage. Srimati Radhika, the primal power or the *Adyasakti* is the most perfect illustration of such selfless intense love for her

beloved Srikrsna. *Brahma* is *nirguna* and formless. But he has the longing to taste his own bliss, through this creation which is known as love. He incarnates Himself in the world to enjoy the love and devotion of His devotees. *Prakrti* in form of Srimati Radhika is able to quench his thirst for infinite and selfless love.

On reaching the highest stage of knowledge one enters into the kingdom of *bhakti* which intensifies to *bhava*, the inner feelings of the heart. Every atom of the creation is changed with love of God. A spark of consciousness descends from God which constitutes the soul. The formless God is to be meditated in the Lotus of the heart of a devotee with intensified feelings of *bhava*. It is difficult for the average man to conceive at heart the formless God without a concrete shape to meditate upon which serves as a medium and this leads to image worship of God. In the process of spiritual meditation, an aspirant has to proceed from the gross to the subtle by the help of an image of God in a form according to his own fancy and liking.

Without this, meditation becomes very difficult. This is the basis of Idol or Image worship adopted by the Hindus. The *gopis* belong to the kingdom of love who won the love of God through passionate yearning and restlessness and Srimati Radhika was the central figure among them and also the most glorifying illustration of this sort of love for God. By entertaining at heart the image and spirit of Srimati Radhika, the aspirant can achieve success and realise God.

In the *Upanisads* the bliss of God is considered to be the *Brahma* Itself. The universe owes its creation and destruction for fulfillment of this bliss of God. It is this bliss of God or *Brahma* which was incarnated as Nandanandana (son of Nanda) Srikrsna. The most arduous penance made by the sages in the dense forest culminated in the *Vrndavana Lila* of God. The *yogis* and the sages eagerly waiting for ages together for their union with that heavenly form of peerless beauty, plunged at last in the ocean of *Nitya Lila* at *Vrndavan* and obtained blissful contentment by testing the nectar thereof. The *sakti* which creates this *nitya lila* of God is his pleasing counterpart known as *alhadini sakti* or Srimati Radhika. One has to shelter himself under a true preceptor without which it is not possible to obtain the grace of Srimati Radhika, the blessful power and the embodiment of *mahabhava*, the most intensified form of *bhakti*.

The *jiva* cannot taste the divine love of *Vrndavana lila* without enkindling at heart the spirit of Radha. This intense love for God is possible only when the *jiva* is free from the worldly attachments. In the heart of the emancipated soul the formless Divine Love blossoms and it is considered to be *Vrndavana*. The pleasing counterpart Srimati Radhika is the goddess of *Vrndavana*. The *jiva* eagers to obtain its spirit, runs after Srimati Radhika who is always on eternal quest for her beloved Madhava. There is blissful union of Radha and Madhava after pangs of separation. This process of hide and seek between the lover and the beloved shall continue as long as the creation exists.

To realise the God-consciousness it is necessary to purify the heart. For this the aspirant should surrender his heart and soul at the lotus feet of God. *Purusa,* the beloved of *prakrti* is the object of love and devotion of an aspirant. The principle of Purusottama of Sri Aurovindo is based on this. After reaching the highest stage of spiritual enlightenment, the *jiva* merges with *Brahma* and becomes s*oham* according to *advaita* philosophy. It is only by selfless love and intense yearning at heart that a deovtee can have realisation of God. One may enter to rigid and severe *yogic* discipline and penance for obtaining

grace of God, but it is easier to realise Him by virtue of pure and stainless love. A true devotee always thinks of God, weeps for him and his hairs stand at the end, the moment he utters or hears the name of God. By considering God to be his own, the aspirant feels a divine impulse in his heart and sees in it the reflection of blissful communion of *jiva* and *Brahma*. God resides in the heart of the devotee in the *nitya lila* place which is *Vrndavana*. Entering into the kingdom of love and devotion the *jiva* shall merge into perpetual bliss and reach the climax of Divine love. Intense love for God is based on *bhava* or innermost feelings of the heart which gains intensity and terms into *mahabhava*. Srimati Radhika was the personification of *mahabhava*. So the ultimate goal of a devotee is to cultivate and assimilate the spirit of Radha for the sake of achieving the God-head.

There is manifestation of the power of God in the minutest particles of the world and the animal world. That is why the whole creation appears beautiful. An elastic mind with child like simplicity is required to appreciate and realise this heavenly beauty.

In the *kaliyuga*, the path of *bhakti* has been recommended by the sages as the easiest means to realise God. But this has been pictured in such a way that an average man cannot comprehend it. The human society has in course of the evolutionary process reached the present stage of its development. The mysterious secrets underlying the spiritual sphere shall be unfolded and people will realise their greatness in promoting religious development.

The heavenly saints of God in their mission to enlighten mankind on the spiritual path and to preach their gospels on the divinity of the creation appear in human society in shape of incarnations of God or holy preceptors to acquaint mankind with the mysterious and playful activities of the creation of God and enkindle the light of God in the heart of purified liberated soul thus fulfilling their mission. They do not aim at emancipation of their own souls by spiritual discipline, but their chief mission is to bring about a super-human transformation of the world. The power of the soul is to be rejuvenated and this awakening of the soul shall in communion with the supreme self be greatest achievement of a spiritual aspirant. This spiritual odour shall spread from the individual to the society taking refuge in the lotus feet of the Lord and the society shall be that of the *Yogis* or spiritual aspirants. Jayadeva was one of such heavenly saints with a mission. It was a different mission – not to preach and sermonise, but to teach and entertain. It was entertainment with a divine purpose of God-realization.

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Sri Jayadev - A Rare Personality

Madhumita Misra

Yadi Hari Smaranay Sarasam Mano
yadi Bilasakalasu Kutuhalam
madhura Komalakanta Padabalim
srunutada Jayadev Saraswatim

That Means reading and listening Geeta Govinda is so heart touching that if you remember Hari, can get nectar as a devotee or can feel Romance having a curiosity for learning luxurious art of education. Geeta Govinda, written by great Oriya Poet Sri Jayadev was composed in simple Sanskrit language including vernacular idioms which was easily understood for common people. It was taken as dance-drama including many works of dramatized prose dealing with the theme of love between Radha and Krishna.

Sri Jayadev's Geeta Govinda is a great poetry in Indian Literature. The hole song of eight Padas (also called as Astapadi) comprises twelve Sargas or Cantos containing 24 Songs (72 Slokas) which is rhythmic and perfectly lyrical to sing. It was written in the period of rise of regional literatures in ancient India. From the beginning of the Christian era to the end of the 10th century, the poets like Bhasa, Kalidas, Asvaghose, Bharavi, Bhartrihari, Bhababhuti, Banabhata, Magha, Sriharsa and others had fueled the lamp of Sanskrit poetry and kept it glowing. These poets raised the flame of golden lamp of Sanskrit literature to great heights and extended the area of illumination all around and Sri Jayadev's Geeta Govinda was the closing song of that era which consists of soul stirring and heart penetrating lyrics. After reading the English translation of Geeta Govinda, the German Poet Goethe was so impressed that he translated Geeta Govinda in German Language as it engendered feelings of wonder in him. He compared Geeta Govinda with "Meghadutam" by Mahakabi Kalidas.

Sri Jayadev was born in Kenduli village surrounded by Kendu and Bilwa trees, situated near Prachi Valley of Puri District. Like Bhakta-Kabi Jagannath Dash's "Bhagabata", Sri Jayadev's Geeta Govinda (composed in the second half of the 12th century A.D.) was spread due to its rhythmic musical excellence which was so dear to Sri Jagannath. At that time, people appreciated and sing songs of Geeta Govinda without understanding the theme, because of its sweet, soft and soothing (komala kanta padabali) lyrics. An example of popularity of Geeta Govinda is – one moon-lit autumn night a Malini (daughter of a Gardener) was deeply merged in the recitation of the songs of Geeta Govinda while plucking brinjal from garden. Lord Jagannath was so attracted by her song that He left Sri Mandir and listended song before her. His valuable silk dresses were torn due to thorns of brinjal plants. Next morning in Sri Mandir, priests and Gajapati

pointed out the cloth of Lord Jagannath were pierced with thrones and torn into pieces. Gajapati became worried and prayed Lord Jagannath and at the last part of the night Sri Jagannath appeared in a dream and disclosed the truth and expressed his desire to listen Geeta Govinda everyday. Then Gajapati ordered that girl (Malini) to sing Geeta Govinda in front of Lord Jagannath as a daily ritual. Another example of Geeta Govinda is – like Sri Jayadev's Geeta Govinda,Gajapati wrote "Abhinaba Geeta Govinda" about the same story. The Pandits, who were jealous on Sri Jayadev's "Geeta Govinda", appreciated "Abhinaba Geeta Govind" and requested Gajapati to sing his poetry instead of Sri Jayadev's "Geeta Govinda" in front of Lord Jagannath. So controversy started and all suggested to keep both books in front of Lord Jagannath before closing the inner sanctum. Next day while opening the inner door, all found "Geeeta Govinda" of Sri Jayadev was placed up and "Abhinaba Geeta Govinda" of Gajapati was put below. Everybody there experienced that Sri Jayadeva's Geeta Govinda was really of superior quality. Another example was- Gajapati Prataprudra Dev ordered the Maharies to sing only Sri Jayadev's Geeta Govinda in their Nrutyaseba. Since then everyday after Badasimhara Besa (before sleep) Lord Jagannath listens Geeta Govinda. So how important Geeta Govinda was ? Another example was- Gajapati Kamarnaba Dev (of Ganga Dynasty) took water everyday after listening Geeta Govinda. Many poets of inside and outside Orissa were so influenced by Geeta Govinda that they wrote thousands of Chhandas, Chaupadis, Chautisas, Pois and Padis. Geeta Govinda was translated in various languages like English, German, Dutch, French, Latin and many local Indian Languages etc. It is so popular that the pictorial representation of Geeta Govind was found in many places of India before Mughal paintings. We find manuscripts at Nepal (1248 AD) and Gujarat (1295 A.D) before we find at Orissa. It is clear that the Geeta Govinda had travelled to bothe Nepal and Gujarat within 50 years from the date of its composition. We also find Geeta Govinda's popularity in various ways. In some part of India like Bengal, Himachal Pradesh, Rajasthan and Gujarat as pictorial representation whether we find as singing or dramatic traditions in Andhra Pradesh, Tamil Nadu, Kerala, Nabadvipa and Manipur. Singing Geeta Govinda in various occasions is also various types. Solo singing performs inside the sanctum of Guruvayoor temple at Kerala and other times it is collective in the courtyard. In Tamil Nadu, it is in the form of collective singing in Radhaklayanam Tradition and in the form of collective singing at marriage in Mithila. So Geeta Govinda plays a pivotal role in the evolution of theological doctrines, literary genres, pictorial styles and music and dance schools.

Except his poetic talent he was a Dance and Music Director also. In one of his stanza, he wrote –

Bagdebata – Charita Chitrita Chittasadma
Padmavati Charana Charana Chakravarti
Sri Basudev Ratikeli Katha Sameta
Metam Karoti Jayadev Kabini Prabandham.

Padmavati, wife of Sri Jayadev was an excellent dancer. Everyday she performed dance before Lord Jagannath singing the songs in chorus accompanied by Jayadev and merged in the thoughts of Lord Jagannath. Sri Jayadev directed Padmavati how to perform. Both the couple also danced before the God. So he said himself as Padmavati Charana (her feet) Chharana (who activates) Chakravarti (Himself).

Except dance and music direction, Sri Jayadev was specialist in Raga and Tala and Chhanda. He mentioned different Ragas for 24 songs. These Ragas are Mangala Gurjari, Baradi, Desh Baradi, Ramakeri, Gujari, Gundakeri, Karnata, Desakhya, Bharabi, Basanta etc. which are used in Odissi Songs. So he laid foundation stone for Odissi Music. The birth place of Odissi dance was from Srimandir and Sri Jayadev was the creditor of this art. Geeta Govinda is performed in all forms of Indian dance mainly Odissi, Bharatnatyam, Manipuri, Kuchipudi, Kathak. The Geeta Govinda padas have been rendered in the sophisticated Classical Musical styles of both Hindustani and Karnataki Music. So, due to its purely musical excellence dealing with different Ragas, Talas and Chhandas, the artists of music and dance appreciate Geeta Govinda widely.

Sri Jayadev was a nature poet also. In Geet Govind he explained the seasons. Such as in "lalita labanga lata pari silan" he explained the youthful flowering, the hum of bees and cuckoo bird in spring season, and in "Chandana Charchita" he explains summer and in "Rasay Hari Miha" he explains cloud, peacock and rainbow in rainy season.

Sri Jayadev took a special position in Orissan cultural History. In case of changes in Orissan Religion, Sri Jayadev's role was important. At that time, Jainas, Baudhas, Shaktas opinion was so high that Baishnavism cult was deemed. For Sri Jayadev's Bhaktidhara for Baishnavism, this cult took its position in Orissan Religion History. Before Sri Chaitanya's arrival to Orissa, Sri Jayadev established Radha-Madhava in Orissan Religion History. Jayadev was the first person who has literally created Radha. In Geeta Govinda, he named Hari as Sri Krishna, Madhava, Basudeva, Jagadish, Kesaba, Purusottama, Murari etc. He found Lord Krishna in Lord Jagannath. In "Dasabatara" sloka he combined Buddhism, Ramaism and Madhavism. He also spread Sri Jagannath cult all over India as a pilgrim in the last stage of his life.

The first song "Dasabatara" written by Sri Jayadev is remarkable and different from other writers Dasabatara. Many Puranas, Aranyakas, Bramhanas say about Sri Bishnus's different Abataras. In Mahabharata we find serially such as Hansa, Kurma, Mastya, Baraha, Narasimha. In Agni and Baraha Purana the serials are Mastya, Kurma, Baraha, Narasimha, Bamana, Parasurama, Rama, Krushna, Buddha and Kalki. The poets like Shankaracharya, Khemendra, Sriharsa also wrote Dasavatara. But Sri Jayadev's Dasabatara is science oriented. In 1800 century Charles Darwin, a Swiss Scientist was famous for his "Theory of Evolution" which is similar to Sri Jayadev's Dasabatara of 12th century. Sri Jayadev started his avatar from Mastya originated from water and Darwin also said life originated from water. Second is Kurma which is amphibian. Third is Sukara which is land oriented, 4th is Narasimha which is half-animal and half-man. 5th is Bamana i.e. the origination of short-height man. 6th is Parasurama, a complete man. 7th is Rama, a good quality man. 8th is Haladhara, a cultivated man. 9th is Buddha, a peace oriented man and last is Kalki, a skilled man or future generation man with various skills. So Darwin's Evolution theory also says from generation to generation life develops.

So Sri Jayadev's Geeta Govind is the immortal work which enlightened the literature, art, architecture, music, dance, painting and textile in many ways. So he was really a polestar of Indian Culture and Literature. We should try to preserve and spread Geeta Govind and the thinkings of Sri Jayadev.

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Saint Poet Shree Jayadeva

B.C. Jena

Verily, Jayadeva was the last of the ancients and the first of the moderns of the Indo-Aryan literature. His rare poetic creation Shree Gitagovinda is a Kavya of world eminence. He flourished in the 2nd half of 12th Century A.D. during the regime of the Ganga Rulers of Orissa. On the basis of discovery of a copper plate grant at Kenduli Village i.e. ancient Kendu Vilva it has been conclusively proved that Jayadeva was born in Orissa at Kenduli village on the bank of ancient Prachi Valley. His ancestry and life history is shrouded in mystery. His name comes at the last among the series of classic poets of Sanskrit like Harshadeva, Bharavi, Bhagabati, Somadeva, Bilhana and Sriharsha. Through his single work the Gitagovinda he became comparable to great poet Kalidasa. He has articulated the erotic love of Krishna and Radha in sublimated idiom giving a mystic and spiritual aura. His Gitagovinda obtained the status of a religious work as he was a saint poet devoted to Vaisnavism. His name and fame as much his work has come down to all sections of the people right from 12th Century A.D. Stories about him have become the part of devotional romance which has exalted the life of common man.

In the legends of mediaeval Vaisnavism, there is legendary accounts of Jayadeva. Some of them do not have historical connotation. One Jayadeva has been depicted as a great Vaisnava saint prior to Guru Nanak by the Shikhs. This indicates that Shikhs have accepted Jayadeva as a Vaisnava saint of eminence. There are several other authors named Jayadeva in various Sanskrit literature. Excepting the Poet of Gitagovinda nothing more is known about other Jayadevas. We find one Jayadeva who has authored a series of aphorisms on metrics.

The opening verse of the Gitagovinda is exhilarating and enchanting. The composition of works is unique:

"*meghair meduram ambaram, vana-bhuvas*
syamas tamala-drumair : naktam;
bhirur ayam, tvam eva tad imam, Radhe !
grham prapaya;"
ittham nanda-nidesatas calitayoh
pratyadhva-kunja-drumam,
"Radha-Madhavyor jayanti Yamuna-kule
rahah-kelayah."

Because of the lucid style of composition, Shree Jayadeva has earned a niche in the heart of all.

As is gleaned historical Jayadeva was infact a secular poet of love and romanticism while Jayadeva the saint and mystic poet of love was a devotee of Krisha. This dual character of the poet is reflected in the various verses of Geeta

Govinda. The 26 verses of Jayadeva which is quoted in the Sadukti-Karnamrita are indicative of the wide range of his poetic interest and achievement which were confined to both love and eroticism. There is an undercurrent of Vaisnav faith and devotion in his articulation. Literary flavour is predominant in his work in the diction of Sringara i.e. love and love play.

His fame spread over the whole of India rapidly during his life time because of the lucidity of the composition. His work satisfied the literary men both in Sanskrit and vernacular language. Legend and romance are the old Hindu renaissance through Bhakti Movement. This was presented in enchanting manner in the Geeta Govinda. For this in a short span of one hundred years of its existence we find a verse being quoted as a benedictory invocation in an inscription in distance Gujarat in Patan dated to 1292 A.D. The early Gujrati poem the Basanta Vilasa composed about 1450 A.D. has echoes of the Geeta Govinda. Some 40 commentaries of the Geeta Govinda have been enumerated by Dr. H.K. Mukherjee in his comprehensive study of the Geeta Govinda. One of the earliest of these is the *rasika priya by Rana Kumbha of Mewar* which is a very learned work. Thus the Geeta Govinda was one of the most commented works of Sanskrit literature. The commentators belong to different regions of India. There were a number of middle Bengali and middle Oriya translation of Geeta Gonvinda. We know from the inscription in the Jagannath Temple at Puri dated 1499 A.D. which has been written by the orders of King Pratap Rudra Deva that from the said date the songs and poems of the gita Govinda were being sung and recited by the Deva Dasis i.e. the temple dancers and singers of the temple. The European scholars also immensely appreciated the articulation of Jayadeva in unequivocal terms. Sir William Jones and Friedrich Rueckert translated into English and German respectively. Later on it was translated into France, English and German by many a European scholar. Now, Gitagovinda has been accepted as one of the masterpieces of world literary heritage.

Jayadeva's work imbided the spirit of classical Sanskrit poetic tradition and that of Apabhransa and Early Bhasha Poetry. The 12 sargas or cantos contain 24 songs. The frame work of the poem; as in the verses form the descriptive portion. It is in the orthodox style of classic Sanskrit in manner, meter, ideas and vocabulary . The songs breathe the atmosphere of Apabhransa or Early Bhasa i.e. New Indo-Aryan literature. Many scholars have suspected that the songs were originally written in Old Bhasha. Being a narrative poem it has a dramatic diction in it.. The songs recited by the Gopis, friends of Radha and Krishna are like speeches. This speaks of its association with Yatra or Songs-drama of the Old Style prevailed in Orissa. It is defined as a Khanda Kavya or a smaller portion of a descriptive narrative character. From the point of view of subject matter it can be said to have association with Sanskrit poems like Ritusambhar and Meghaduta. This special character of the work consists in its combination of account of love with an undercurrent of conversational style. It is also combination of two style viz.the descriptive portion and the song portions. The Poem consists of all total 386 verses. In the descriptive portions and in the 24 songs which are spread throughout the 12 sargas or cantos into which the poem has been divided. The cantos have one theme. After a brief introduction in the first canto which is benedictory verses with two invocations to Vishnu he describes 10 incarnations of God and the poem makes its beginning. Thus every way the creation of Shree Jayadeva was multifaceted and multicoloured.

The supreme beauty of his verbal melody is just untranslatable in any other languages. The line should be heard as chanted or recited in order to appreciate appropriately. Love i.e.Sringara or physical love and sexual union and love play or frank profane love is the centre of attraction in literary composition of Gitagovinda. There is background of nature in spring time embracing trees,creepers and flowers amidst hills and dalis and flowing streamlets, the singing of birds and buzzing of bees. Love in it describes Kama or physical love and Sringara or sexual union in its mundane and material plane. Love and love situations as reflected in the Gitagovinda is universally appreciated. But amidst erotism there is undercurrent of true devotional love with God. Because of this lucid presentation, the themes of Gitagovinda finds reflection in Indian paintings traditions. In different schools of mediaeval paintings of North and South India we find conspicuous presence of Gitagovinda. In erotic sculptures of contgemporary North India and Orissan temple arachitecture we find best plastic illustrations of Gitagovinda scenes and situations. This has also inspired the artists of Gujarat and Rajsthan. In Orissa even now the paintings tradition and sculpturisation takes inspiration from Gitagovinda idiom. Jayadeva's Gitagovinda also gave birth to the new cult of Radha Krishna worship.

The name of his father was Bhojadeva and his mother was Radha Devi or Ramadevi. He has married to Padmavati. But some scholars believe that he had two wives Bijaya and Jaya who were very beautiful. Jaya was Padmavati who was dear to Jayadeva who used to sing and dance with her. Bijaya was looking his home affairs who was expert in discharging household duties meticulously. Padmavati was a cultured lady with proficiency in scriptures and Gandharva lore. Her behaviour was enchanting and her devotion to Jayadeva was unprecedented. Because of her celestial countenance she was dear to everybody. It is said that behind the success of a man there remains a woman and in case of Jayadeva Padmavati was the source of inspiration for him.

At the fag end of his life Jayadeva led the life of a Sadhu in a sacred place for emancipation. He proceeded to Benaras with his beloved wife Padmavati. There he made friendship with the Maharaja of Benaras who treated him with honour and affection. But another school of scholars opined that Jayadeva along with Padmavati spent their last part of life at Puri praying at the feet of Lord Jagannath. In fact Jayadeva was the blessed son of Saraswati who could create an immortal creation like Shree Gitagovinda. At present he efflorescently and singularly stands as a luminary of opulence in the firmament of Kalingan horizon.

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Dasavatara in Sri Jayadev's Gita Govinda

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The cycles of creation and destruction are an integral part of Hindu philosophy, which also reaffirm the notion of the ten Avataras. This concept of the Avataras reestablishes the idea that God has time and again taken a human form to rid the earth of suffering and evil. The Avataras come at a juncture when the world is in a crisis when evil, injustice and inequality rule. He removes negativity from this world and anchors in a positive new change creating a whole new world- a Golden Age.

The formulation of Dasavatara of Visnu is a significant contribution of Sri Jayadeva, Krsna as an Avatara is not included in the Dasavatara hymns. The enumerated list of Avataras varies from four, six, ten, twenty-five and thirty-nine. The post narrates only ten Avataras which is universally accepted. Considering the importance of Buddha in the socio – cultural matrix of Orissa Sri Jayadeva very wisely and appropriately incorporated Buddha in the pantheon.

The concept of Visnu's avatara dates back to the Mahabharata age spread sporadically either, in individual form or in group (the number of Avataras varying from period to period and from author to author). Historically, archaeologically and literally the avataravada of Visnu became an integral part of Vaisnava faith from the early centuries of Christian era. Following the earlier Dasavatara tradition Sri Jayadeva made the cult more popular in the society in his lucid description. People irrespective of castes, sects, sex and creed continuously chant the Dasavataras devotionally in the temples, shrines and even in their own houses, very often not knowing the meaning of the hymns and the songs. By the time Sri Jayadeva appeared in the socio – religious arena of Orissa, the idiom of Dasavatara had already flourished in Orissa. The ending version of each avatara "Jai jagadisa hare" was invoked to Sri Jagannath. The inscription of avataras ranging from 7th century A.D. onwards the profuse sculptural depiction of the avataras in the Vaisnava temples with high concentration in Prachi valley, in the Jagannatha Kshetra delineate deeply rooted tradition in the sacred soil of Orissa. The images of avataras so far come to light in Orissa are too numerous to allude here. Undoubtedly the cult had a great influence on the mind's eye of the saint poet devotee Sri Jayadeva, who made it more popular and more acceptable in his lucid and lyrical description.

In the first section of the famous Gita Govinda the poet writes about the ten incarnations of Lord Vishnu and he evokes Vishnu as Krishna -Keshava.

"Vedan uddharate jaganti vahate bhu-golam
udbibhrate daityam darayate balim chalayate

ksatra-ksayam kurvate
paulastyam jayate halam kalayate karunyam
atanvate mlecchan murchayate dasakrti-krte
krsnaya tubhyam namah"

O Krishna, I offer my obeisance to You, who appear in ten incarnations. In your appearance as Matsya, You rescued the Vedas, and as Kurma, You supported the Mount Mandara on Your back. As Varaha, You lift the earth with Your tusks, and as the Narasimha, You tore open the chest of the demon Hiranyakasyapu. In the form of Vamana, You tricked Bali by asking him for three steps of land, and then you took away the entire universe from him by expanding Your steps. As Parashurama, You annihilated all the wicked Kshatriya kings, and as Ramachandra, You killed the demon king, Ravana. In the form of Balarama, You drew the River Yamuna towards You. As Lord Buddha, You showed compassion towards everyone and at the end in Kaliyuga, You appear as Kalki to slay the (mlecchas) low-class men.

1. Matsyavatara: The Fish Incarnation of Vishnu

"Pralaya-payodhijale dhrtavanasi vihitavahitra-
caritra-makhedam Kesava dhrta minasarira
jaya jagadisa hare"

O Kesava (Vishnu)! In the form of Fish (minasarira), Holding the Vedas like a vessel undeflected from its course in the deluge to preserve the knowledge of Vedas, You took the incarnation of Fish! Praise be to Jagadish! Lord of the universe!

Matsya or the sacred fish is Vishnu's first incarnation in the avatar doctrine. The Shatpath Brahmana is the earliest text to mention the Matsyavatara of Vishnu and associates this story to Vaivasvata Manu who helped save the world and the human race from the Great Deluge (Mahapralaya). The Padma Purana relates the Matsyavatara to the demon Shankhasura and the Matsya Purana associates it with the demon Hayagriva.

Manu was the grandson of Brahma. One day, while he was doing penance he went to the river Kritamala to bathe. As he took some water in his palms as an offering a tiny fish came into his hands. The fish prayed to Manu requesting him not to throw him back into the river because the bigger fish would eat him. Manu brought this tiny fish home. To his amazement the fish grew larger everyday. He then put it in a larger pot but it grew bigger, he then placed it in an enormous lake and finally in the Holy Ganges. But it didn't stop growing and outgrew the large river. The dismayed Manu asked the fish to reveal its identity. The fish told Manu that after seven days there would be a great flood and the waters would cover the entire earth. He instructed him to construct a large boat, take the seven sages (Saptarishi), carry all varieties of seeds in it and escape. When the Mahapralaya finally came everything was submerged in water. A fish with a golden horn appeared. Manu tied his boat to the horn of this big fish and reached the summit of the Himalayas. After the torrential rains ended, everything in the world ceased to exist except Manu and the seven sages. In this way Vishnu as Matsyavatara saved his devotees from destruction.

According to the Padma Purana Sage Kashyapa's wife Diti gave birth to a demon-son Makara who stole the Vedas from Brahma. As the Vedas were no longer there to guide mankind all manner of sin and vice increased. On Brahma's request Vishnu incarnated as Matsya killed Makara or Shankasura hiding in the conch Panchajana and recovered the lost Vedas.

In this typical Uniara painting, Vishnu is portrayed in half human half fish form emerging from the waters after vanquishing the demon Hayagriva who is hiding in the Panchajanya conch. Here the artist has shown the Shankasura episode

where the demon also assumes a half demon half conch form. Brahma is shown with folded hands requesting Lord Vishnu to recover the stolen Vedas from the demon. This is a well-known version of the Matsyavatara from the Padma Purana.

2. Kurmavatara: The Tortoise Incarnation of Vishnu

"Ksitirati-vipulatare tava tisthati prsthe dharani-dharanakina-cakragaristhe Kesava dhrta kacchaparupa jaya jagagadisa hare"

O Kesava (Vishnu)! In the form of Tortoise (kacchaparupa), On your broad and vast back the world rests, creating circular marks. Praise be to Jagadish! Lord of the universe!

Kurmavatara or Vishnu's incarnation as a tortoise relates to the legend of the Samudra-manthana or the churning of the ocean. Once sage Durvasa visited Indraloka. Indra was riding his white elephant Airavata in a procession. The sage garlanded Indra with a divine garland but the arrogant Indra tied it to Airavata's tusk. Irritated by the bees that swarmed to collect nectar from the flowers; Airavata threw the garland from his tusk on to the ground and trampled upon it. Indra's insensitive behaviour infuriated the Sage who cursed him saying that the devas would loose all their power. Instantly the three worlds disappeared. Indra prayed to Vishnu- the Preserver. Vishnu told them that they would recover their glory if they all drank Amrita the nectar of immortality. This could only be obtained by the churning of the ocean. Lord Vishnu suggested that they lift Mount Mandara, place it in the ocean use it as a churn drill or rod and employ the serpent Vasuki to act as the churning rope. The Asuras agreed. Mount Mandara was placed in the ocean. Without support the mountain would surely have sunk, so Vishnu took the form of a tortoise and supported the mountain on his back. Vasuki coiled himself around the mountain acting as a perfect churning rope. Thus the churning of the ocean began.

As the Asuras and Devas began churning, fourteen precious objects or Caturdasha- ratnam began to appearing from the Kshirasagara. The first to emerge was a deadly poison called Halahala or Kalakuta which signified the impurities of the ocean and was very lethal. Shiva, the lord of destruction responded to the prayers of the Asuras and Devas. He drank the poison but kept it in his throat. Henceforth Shiva was also known as Neelakanta or the Blue Throated One. Thereafter emerged Surabhi or Kamadhenu- the wish fulfilling cow which was given to the Sapta Rishis, Vaaruni or the Goddess of wine, the Parijata tree, Apsara or the celestial nymph Rambha, the sun, the moon which now adorns the head of Shiva, Sri or Mahalakshmi, Uchaisravas- the seven headed white steed given to Bali, Indra's future vehicle Airavata, the Conch-Panchajanya, the Bow-Sharnga, the Mace-Kaumodaki, the Jewel-Kaustabhamani and lastly to appear was Dhanvantari- the divine physician. He held a golden pitcher full of ambrosia or Amrita the nectar of immortality - an elixir of life. Thus the nectar was obtained.

A strong battle ensued between the devas and the Asuras for this Nectar. Lord Vishnu then assumed the form of a beautiful apsara Mohini who was entrusted the task of distributing the nectar amongst all. She began by distributing the nectar to the Devas while the Asuras waited patiently for their turn. By the time she reached the Asuras there was not a drop of nectar left in the pitcher.

3. Varahavatara: The Boar Incarnation of Vishnu

"Vasati dasanasikhare dharani tava lagna sasini kalankakaleva nimagna Kesava dhrta sukararupa jaya jagadisa hare"

O Kesava (Vishnu)! In the form of the Boar (sukara) ! Fixed on the tips of your tusks the earth did dwell peacefully, resembling the digit of the moon. Praise be to Jagadish! Lord of the universe !

Vishnu's incarnation as a Boar is known as Varahavatara. This incarnation is described in a number of texts and associated with it are at least three legends. The first text to mention the earth being lifted from the depths of the lower regions by a boar called Emusha is the Satapatha Brahmana.

It is said that once the four Manasaputra's of Brahma - Sanaka, Sanandana, Sanaatana and Sanatkumara went to Vaikuntha to visit Vishnu. At the seventh gate the two gatekeepers Vijaya and Jaya prevented the sages from entering. This angered the sage Sanaka who cursed Vijaya and Jaya that they would be reborn as demons. Only if they were slain thrice by Vishnu Himself could they regain their present position.

In their first birth as demons they were born as Hiranyaksha and Hiranyakasipu. Jaya as Hiranyaksha was slain by Vishnu in his Varahavatara and Vijiya as Hiranyakasipu was killed by Vishnu in his Narasimhavatar. They then took birth as Ravana and Kumbakarna and were killed during Visnhu's Ramavatara. Finally, they were born as Sisupala and Dantavaktra and annihilated by Vishnu in his Krishnavatara.

The demon Hiranyaksha caused damage and destruction to all those who opposed him. After capturing Bhudevi- the Earth Goddess he descended into the Patalaloka or the nether world and began beating the waters of the ocean with his cudgel, thus causing trouble for Varuna, the Lord of the Ocean. Vishnu assumed the lowly form of a boar to kill the tyrannous Hiranyaksha and rescue Bhudevi. As he manifested himself, the three worlds resounded with loud thundering sounds. The Boar carried Bhudevi on his golden tusks out of the waters of the ocean. Hiranyaksha then challenged Varaha to a fight. A titanic battle ensued between Varaha and Hiranyaksha. Ironically, the same tusks that had tenderly held Bhudevi also ripped the demon apart and killed him.

Varaha images can be depicted either Anthropomorphic as the Nrvaraha or Zoomorphic as the Yajnavaraha associated with sacrifice. The Vishnudharmottara Purana mentions a form of the Varaha which has four faces and eight hands holding the weapons Gada, Khadga, Bana, Chakra, Sankha, Khetaka and Dhanus.

4. Narasimhavatara:The Man - Lion Incarnation of Vishnu

"Tava kara kamalavare nakhamadbhutasrngam
dalita hiranyakasipu varabhrngam
Kesava dhrta naraharirupa
jaya jagadisa hare"

O Kesava (Vishnu) ! In the form of Man-Lion (Naraharirupa) ! Your lotus hands with sharp nails became wonderful claws that tore and shredded the body of demon Hiranyakasyapu protecting your devotee Prahlada. Praise be to Jagadish! Lord of the universe !

Hiranyakasyapu was deeply hurt and enraged by the death of his brother, Hiranyaksha by Vishnu. He decided to avenge his brother's death by killing Vishnu and all those who prayed and worshipped him. Hiranyakasyapu prayed to Brahma who granted him the boon that he could not be killed by anyone on earth or in the sky, during the day or at night, inside or outside a house, by beast or man or by any weapon. Thus, believing that he was invincible he became very arrogant.

During her pregnancy, Hiranyakasypu's wife heard of the glory of Vishnu from Sage

Narada. The unborn child Prahlada listened to the glories of Vishnu and became an ardent devotee. Hiranyakasyapu made great efforts to divert his son's mind from his devotion of Vishnu. At an early age Prahlada was sent to a Gurukula where he was taught that his father Hrianyakasipu was the all-powerful god but his little mind could not be influenced. He then ordered that Prahlada be put to death. He is thrown into the ocean, then hurled from the top of a mountain but Prahlada escaped unharmed each time. This reinforced and strengthened Prahlada's belief of Vishnu's omnipresence. Infuriated by this Hiranyakasipu mockingly asked Prahlada if Vishnu was also present in a pillar of his palace. The little child replied that as he was all pervading, omnipresent and dwelt in all beings, living and non-living he was also present in the pillar. The pillar suddenly broke open and Vishnu as Narasimha half man half lion form emerged. He lifted Hiranyakasipu on to his lap and crushed him with his embrace. Discarding his conventional weapons Narasimha converted his claws as a weapon and tore open the demon's abdomen. The time was dusk and he was seated on the doorstep which was neither inside nor outside a house.

According to the Padma Purana, Narasimha is white in colour and wears red garments with suitable ornaments, and a Karanda mukuta.

5. Vamanavatara: The Dwarf Incarnation of Vishnu

"Chalayasi vikramane balim adbhutavamana
padanakhanira-janita-janapavana
kesava dhrta vamanarupa
jaya jagadisa hare"

O Kesava (Vishnu) ! In the form of the Dwarf (Vamana) You cleverly deceived the King of the world, Bali. Cleanser of the people through the sweat of your toenails. Praise be to Jagadish! Lord of the universe !

Bali was the grandson of the virtuous King Prahalad. He got the name Mahabali because of his great prowess and was the mighty King of the Asuras. He performed a sacrifice called Viswajit to master the three worlds. Out of the sacrificial fire came armour, a golden chariot and a coat of arms. Thus he became unconquerable and drove the Devatas and Indra out of Indraloka to the nether world.

Sage Kasyapa's wife Aditi who was the mother of the Devas was devastated by the defeat of her sons. The holy sage suggested that she observe the Dvadashi-vrata (Fast of the twelfth lunar night) which is dedicated to Lord Vishnu. Pleased by Aditi's penance he granted her, her wish to be born as her child and thus help Indra recover his lost supremacy. Soon after Aditi gave birth to a dwarf who had an enormous brilliance on his face. He instantly grew to maturity but remained a short statured Brahmin and was named Vamana.

After the demons, under Bali defeated the gods and deprived them of their lands, Vamana - Vishnu led the vanquished God's to the mighty king Bali to beg for a piece of land. Bali was performing the Aswamedha Yajna. He received him with full honour and agreed to grant him anything he desired. Vishnu in the form of Vamana asked the great king for as much land as he could cover in His three strides. Bali readily agreed to this. King Bali asked the dwarf to measure with three strides the land that he wanted. Immediately the dwarf Vamana grew to a gigantic size and assuming the form of Trivikrama he measured in two paces the earth and the heavens. For his third step he asked Bali for a place to put his foot. Bali bowed before Vishnu and offered him his head.

Lord Vishnu blessed the mighty king and sent him to the nether world.

The Dwarf incarnation of Vishnu demonstrates to us that valour can only be realized if we surrender to the Lord completely.

6. Parshuramavatara

"Ksatriyarudhiramaye jagadapagata papam
snapayasi payasi samitabhavatapam
kesava dhrta bhrgupatirupa
jaya jagadisa hare."

O Kesava (Vishnu) ! In the form of the Lord of Bhrigus (Parshurama), You have rid the earth of its tyrannous rulers, thus purifying it of sin and destroying the suffering of the world. Praise be to Jagadish ! Lord of the universe !

Parshurama is revered as the sixth of Vishnu's ten incarnations. It is said that the King Karttavirya of Mahishmatinagar was a great and pious king. He underwent rigorous penance and pleased Sage Atri's son, Dattatreya who granted him his desire for one thousand hands.

Sage Jamadagni lived in a hermitage with his wife and sons, including Parshurama. King Karttavirya was out hunting. He reached the hermitage of Sage Jamadagni looking for a place to rest and food for his retinue. The Sage called upon his celestial cow Kamadhenu to provide food for the king and his retinue. As the king was leaving he asked the sage to give him this celestial cow. When the sage refused to part with it the king took it away by force. On Parshurama's return his father told him all that had transpired. The enraged Parshurama set out for Mahishmatinagar to avenge his father's insult. He single-handedly killed King Karttaviryarjuna and cut off his thousand arms with his axe or Parasu. He retrieved his father's celestial cow and brought her back to the hermitage.

Renuka - Parshurama's mother went to the river to fetch water. A Gandharva or demi god named Chitraratha was bathing in the river. Renuka happened to look at him and was mesmerized by his beauty. The Sage Jamadagni saw this through his spiritual vision and was enraged by her act. Upon her return, the infuriated sage commanded each of his sons to cut off their mother's head. None of the sons complied except Parshurama who instantly beheaded her. Pleased by this act of obedience Sage Jamadagni granted him a boon. Parshurama asked that his mother to be brought back to life immediately. The sage therefore granted him his wish.

After the death of King Karttaviryarjuna his sons to avenge their father's death stormed the hermitage. They cut off Sage Jamadagni's head. While lamenting the death of her husband Renuka beat her chest twenty-one times. Parshurama then vowed to destroy twenty-one generations of the Kshatriyas. He first killed all the sons of Karttaviryarjuna, then he travelled over the entire world twenty-one times killing every Kshatriyas king that he found.

7. Ramavatara of Vishnu

"Vitarasi diksu rane dikpathiamaniyam
dasamukha-mauli-balim ramaniyam
kesava dhrta ramasarira
jaya jagadisa hare"

O Kesava (Vishnu)! In the form of Lord Rama to uphold dharma or righteousness, You spread the ten heads of Ravana in the four directions, rendering the guardians there of resplendent ! O Kesava ! You assumed the form of Rama ! Praise be to Jagadish ! Lord of the universe !

The Ramayana the story of Rama, the seventh incarnation of Vishnu is the first 'Adi Kavya' or ornate poem. It was composed by sage Valmiki. Rama was born to Dasharatha- the Ra]a

of Ayodhya. He accompanied the sage Vishvamitra to Mithila where they witnessed the Svayamvara of Raja Janaka's daughter Sita. Raja Janak had vowed to wed his daughter to the man who could string Shiva's bow. Many mighty kings had failed. Then sage commanded Rama to string the bow. As Lord Rama began to bend the bow in order to string it, it broke into two pieces. Amidst great festivities Rama was married to Sita. After the festivities were over and they were returning to Ayodhya, the news of the breaking of Shiva's bow reached Parashurama a great devotee of Shiva and the sixth incarnation of Vishnu. He was enraged by this act and came to punish the perpetrator of this deed. On seeing Rama, Parashurama realised that he was Purushottama, the indestructible Vishnu and instead bowed down to him in reverence.

Raja Dasaratha announced that Rama would be coronated as the next king of Ayodhya. Bharata's mother Kaikeyi unhappy with this announcement, reminded Dasaratha of the two boons he had granted her earlier. She staked her son Bharata's claim to the throne of Ayodhya and demanded that Rama be exiled to the forest for a period of fourteen years.

After Rama left Ayodhya with Sita and Lakshmana, he continued southward towards Panchavati and decided to pass the rest of his period in exile. Ravana's sister Surpanakha happened to see the handsome Rama in the forest and was besotted by his appearance. She first tried to lure Rama and then Lakshmana. When she failed, she assumed a horrible appearance to frighten them. To punish her, Lakshmana cut off Surpanakha's nose and ears. Surpanakha then went to complain to her brother, Ravana. Enraged on seeing her condition, he decided to avenge her insult. Ravana devised a plan to abduct Sita. He commanded the demon Maricha to assume the form a magical deer. Sita enticed by the beauty of this golden deer requested Rama to capture it for her. Rama wounded Maricha who imitating Rama's voice cried out to Lakshmana for help. Sita ordered Lakshmana who was guarding her to go and help Rama. Ravana hiding behind the trees near the hermitage assumed the form of a mendicant and appeared before her begging for alms. Ignorant of his evil intentions Sita fell into his trap. He abducted her and returned to Lanka. When the brothers returned to their hut, they found Sita missing and set out in search of her. Rama reached a mountain named Rishyamuka where he met Sugriva and Hanuman.

Sugriva's monkey army set forth in search of Sita. They learnt that Sita was in the Ashoka Vatika in Lanka. Hanuman set forth for Lanka and crossed the great ocean. He found Sita in the Ashoka Vatika and gave her Rama's ring as a mark of identification. Before returning with the Sita's jewel Hanuman caused great destruction to Lanka, setting the entire city ablaze, except the Ashoka Vatika.

Rama decided to attack Lanka. A Great War began between the demons and the monkeys. At last a fierce battle ensued between Rama and Ravana. Finally Rama killed the might Ravana. Thus the forces of evil were destroyed. The fourteen years period of exile was now near completion. Rama returned to Ayodhya. This incarnation demonstrates how it is possible for a human being to rise to the level of divinity by adhering to the law of his Dharma.

8. Balaramavatara

"vahasi vapusi visade vasanamjaladabham
hala-hati-milita-yamunabham
kesava dhrta-haladhararupa
jaya jagadisa hare"

O Kesava (Vishnu) ! In the form of Balarama, the plough bearer ! You wear on your

glowing body garments the colour of the cloud, blue like the river Yamuna, flowing because of the fear of your plough ! O Kesava ! You assumed the form of Balarama. Praise be to Jagadish! Lord of the universe.

Vishnu's incarnation as Balarama or Balabhadra or Baladeva as the elder brother of Krishna is considered His eighth incarnation in the series of Avatars.

When Bhudevi approached Vishnu for help he assured her that he would take birth as Devaki's two sons, Krishna and Balarama and end the atrocities of the wicked King of Mathura, Kamsa. Some ancient texts proclaim that Vishnu in the form of Krishna is the Purnavatara or complete incarnation and Balarama is his Anshavatara or part manifestation. There is a greater agreement to the suggestion that it was the Great Serpent Shesha who incarnated as Balarama on the behest of Lord Vishnu to help him when he took birth as Krishna.

Balarama had great physical prowess. He was the master of two celestial weapons the Hala (plough) and the Musala (pestle) which were the original weapons of Ananta. According to the Visnhudharmottar Purana his plough is symbolic of Kala (time) the destroyer. He has a close relation with the earth and is often associated with agriculture. His standard was the tala (palm), therefore he is sometimes known as Taladhvaja or Talaketu. He always wore one earring on his left ear an ornament gifted to him by Lakshmi, blue clothes and a lotus garland which the river Yamuna had presented to him.

It is stated in the Bhagavata Purana that jealous of Krishna's union with the river Yamuna Balarama one day summoned the river to come to him as he wanted to bathe in it. Yamuna understood his intention and evaded his command. This infuriated Balarama who diverted the course of the river with his plough. The anxious river Yamuna begged him for forgiveness and appeased him by offering him unfading lotus flowers and blue garments which would never deteriorate.

9. Buddha: The Enlightened One

"Nindasi yajnavidhe-rahaha srutijatam
sadaya-hrdaya darsitapasughatam
kesava dhrta buddhasarira
jaya jagadisa hare"

O Kesava (Vishnu) ! In the form of Buddha, the enlightened one! Out of compassion in your heart you have condemned the ritualistic fraction of the Vedas proclaiming the killing of innocent animals. Praise be to Jagadish ! Lord of the universe!

The Puranic tradition highlights Buddha as Vishnu's ninth incarnation. The sixteen chapter of the Agnipurana states that Vishnu incarnated as the son of Suddhodana under the name of Siddhartha later to be known as Buddha - the Enlightened One.

The historical Buddha is identified as Siddhartha. He was born in 563-483 B.C. as the prince of Kapilavastu today an area identified close to the Indo - Nepalese border. Prior to Buddha's birth Mayadevi had a dream that a white elephant entered her womb. At the time of the prince's birth astrologers predicted that he would renounce the world and would become a great spiritual teacher. Distressed by these predictions, King Suddhodana did everything in his power to keep Siddhartha totally engrossed in worldly activities. One day this young prince saw the distressing sights of an old man, a sick man, a corpse and a monk. These sights made him reflect on life- its pain and sufferings. In the dark of the night he left the comforts of the palace to become a monk. For many years he wandered in vain. Then he sat to meditate under the Bodhi tree at Bodhgaya searching within himself for the meaning

and purpose of life and finally gained Enlightenment. He gave his first sermon at Sarnath to five ascetics and it is known as The Turning of the Wheel of Law or Dharmachakrapravartana. He preached a middle path to attain Nirvana or salvation.

His message and teachings are extremely simple yet tremendously powerful. He preached that to break out of the cycle of life, death and rebirth one must overcome ignorance by understanding the four noble truths:

1. Life is full of suffering.
2. Ignorance causes suffering, which is due to craving and illusion.
3. There is an end to this suffering and that state is known as Nirvana, the end of rebirth where the self is free from the ego and bondage to this material world.
4. The only way to achieve this state of Nirvana is through the eightfold path which consists of right views, right thinking, right living, right speech, right effort, right memory, right action and right meditation.

The symbolic significance of Buddhavatar of Vishnu is that he is an embodiment of compassion.

10. Kalkiavatara: The Horse Incarnation of Vishnu

"Mleccha-nivaha-nidhane kalayasi karavaiam
dhumaketumiva kimapi karalam
kesava dhrta Kalkisarira
jaya jagadisa hare"

O Kesava (Vishnu) ! In the form of the severe Kalkii to destroy the wicked, You carry a comet like sword in your hand, trailing a succession of disasters upon the wicked and evil. Praise be to Jagadish ! Lord of the universe !

Vishnu in his last Avatar will be Kalki- an Avatar meant for removing human ignorance and awakening Divine Consciousness. After Vishnu's incarnation as Krishna at the end of Dvaprayuga evil forces will slowly gain supremacy. It is then that Vishnu will descend from Vaikuntha, his heavenly abode for the last time to redeem his followers.

Vishnu's incarnation as Kalki is prophesized in the Agni Purana. He will hold a sword, a conch, a discus and a mace and will be seated on a horse. This Avatara will manifest in the Kaliyuga. There will be atheism, disbelief and anarchy, the Vedas and their laws will lose their importance, the Kshatriyas will be eliminated and the Brahmins will give up their yajnas and rituals. People will plead for someone to relieve them of their suffering and to bring a change into their lives. Then Lord Vishnu will appear in the form of Kalki, the son of Vishnuvyasa a Brahmin priest and his wife Sumathi of Shambhala village on the banks of the Ganges. He will appear seated on a white horse named Devadatta. Blazing like a comet, Kalki- the apocalyptic redeemer will emerge with a massive scimitar drawn in one hand and a large spear and a mighty bow in the other. It is believed that Lord Vishnu in this Avatara will destroy evil, restore morals and order in the world. He will eliminate all evil forces, wrong-doers in three nights. Thus he will establish peace and be the harbinger of the next golden age, restoring Dharma to society, and this will be an era of peace and prosperity.

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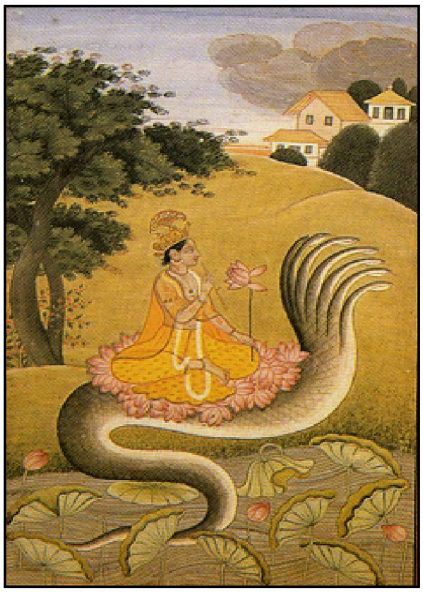
Jayadev : The Progenitor of Odissi Music

Kirtan Narayan Parhi

The traditional school of classical music presently popular as Odissi was referred to by *Bharat muni, Matanga muni, Saraangadev* under an independent nomenclature *Udramugudhi prabritti*, which was once popular as *Kaling music*, *Utkal music* or *Jayadevi* music in different periods. One does not require to survey the history, delve deep into texts and characteristic features of Odissi system to understand its classy style if he atleast reads and listens to Gitagovinda of Sri Jayadev. As this sacred piece of lyrical poem contains all the salient and distinguishing features of classical music, the reader or listener must appreciate the uniqueness and wholesomeness of Odissi as the third system of classical music in the domain of Indian music.



Ragaputra Kalinga Kangra, Pahari, Circa AD 1790

Sri Jayadev has composed this illustrious Gitagovindas as per the specifications of Udramagadthi prabritti, *Ardha magadhi Padasrita giti, Bhinna swarasrita giti* and *navatalasrita giti*. The songs of Gitagovinda are set to *talas* (rhythems) such as *Rupaka Nisarah Jati Astatala*, & *ekatali,* which are included in navatalas, commonly used in Odissi till to-day.

The raga repertoire used in Gitagovinda such as *Malava, Gurjjari, Vasanta, Ramakiri, Malavagouda, Gundakiri, Karnata, Desakhya, Desavaradi, Bhairavi, Varadi* etc. are being recited in Lord Jagannath temple as well as all the corners of Odissa since 12th century. Can we not claim without oddity that these are native ragas of Odissa ? After around 100 years of Sri Jayadev, Sri Sarangadev has identified some of the aforesaid ragas as *kriyangh* or *adhunaprasidha raga's*. By the 14th century the ragas of Gitagovinda had become so popular throughout India that *Lochan kavi* of Mithila distinguished these ragas as Jayadevi ragas because these were being recited, delineated and developed by Sri Jayadev with distinctive musical entity.

The characteristic features of ardhamagadhi padashrita giti is clearly understood from the titles of the cantos such as *Samoda-*

Damodara, Aklesha-Keshava, Mugdha Madhusudana, Snigdha-Madhava, Sakankhya-Pundari-kakhya, Sotkantha-Vaikuntha, Nagara-Narayana, Bilakhya-Lakhmipati, Mugdha-Mukunda, Chatura-Chaturbhuja, Sananda-Damodara and Suprita-Pitambara.

About characteristic features of ardhamagadhi giti, Dattila has said -

"*Ardhakala nibruttaistu varnadhya Charddhamagadhi.*" (Dattilam 2:238B) i.e. Ardhamagadhi is rich in varnas and has repetitions made in half that time.

Sarangadev has also written in *Sangit Ratnakara* that -

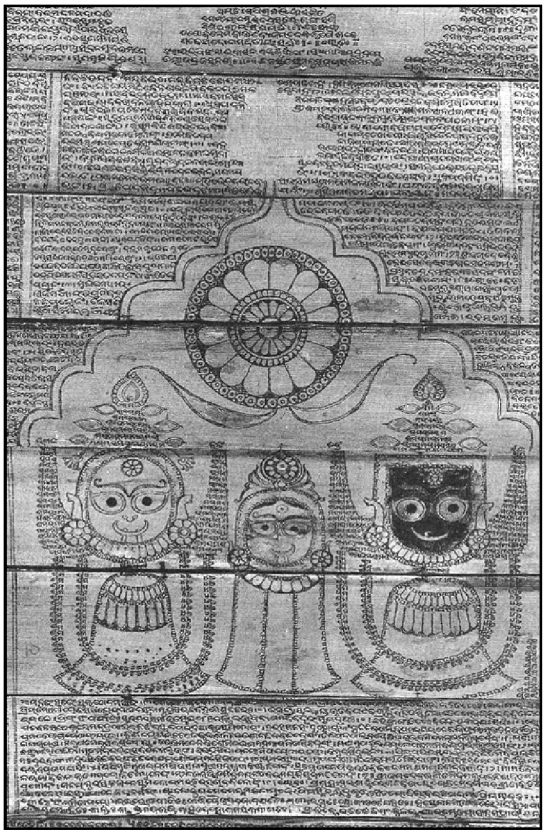
"Purvayoh padayoaryodhai Charame diryadodite." Sri Jayadev has composed Gitagovinda according to this principles.

The recital of Gitagovinda follows the specifications of Bhinna-giti. According to Mattanga muni, Bhinnagiti is said to be mobile, curved, subtle, spread out, attractive with cadence and made to shine up wards.

"Sukshmaischa prachalairvakrarullasita prasaritaih. / Lalitaistaramandraischa bhinna gitirudahruta." (Brihaddesi 3:276)

Prior to Jayadev (12th century AD), the tradition of music in Kalinga, Utkal was rich but the gities (style of recital) flourished during Jain period was almost lost. But the essence of Buddhist music which had reached the zenith during 7th to 11th century maintained its identity at-least till Jayadev's time. According to Madanlal Vyasa, Sri Jayadev was a *smarta* (ardent brahmin) means an erudite scholar in smruti shastra and a devotee of five deities. Supporting the views and statements of others, he has again said that Jayadev was a follower of *Sahajajana* (easier path) and was well versed in *charya gitika*. From the Odiya daily, the Sambad dt. 20.8.03 we come across a news item that Prof. Satyakam Sangupta (a scholar of West Bengal) has said "Jayadev has placed Buddhadev as an incarnation of Lord Vishnu in his Dasavatara prabandha of Gita Gobinda. Therefore, it is perspicuous that Jayadev had knowledge about Charyagiti i.e. Buddhist music. One has to acknowledge that Gitagovinda was written in order to be sung before Lord Jagannath exclusively and since then (12th century) the recital is being continued as daily ritual in Srimandira to propitiate the Lord. We can not construe that the conventional rendition style of Gita Gobinda is completely lost. The rhetoric words, symphonic syntax set to rhymes, rhythms and ragas of Gita Gobinda fascinate the hearts and minds of each listener with rapture. Jayadev has engirdled the transcendence hence with the transient in simple Sanskrit grandiloquence. He has elucidated with lucidity the supreme lose between Lord Krishna (Parama) and Radha (Jiva) in earthly mood. This unparalleled and superb piece of lyrical literature and classical music transgress all human hearts.

Gita means song and Govinda is a synonym for Lord Krishna. Go is the metonym for cow, world, heaven, *veda mata, gayatri, vak* (speech) and *vani* (voice). He who knows the theology of vak and vani is called Govinda. Sri Jayadev has composed Gitagovinda in conjuction with his musical skill and magical vocal genres. At the outset he has paid auspicious salutation to the Goddess of learning, Sri Saraswati, who stays in his heart. In comparison with Umapatidhar, Sarana, Dhoi and Gobardhanacharya he has ranked himself as the best for his composition with sweet words, romantic and erotic sentiments, amorous love story of Radha-Krishna and above all aesthetic essence; the articulation of which



A folio of Gitagovinda, palm leaf, 18th century A.D.

imbues ecstasy and alacrity in each heart. Shri Jayadev has again confirmed in the 12th canto that let the dilettantes know the theme of *gandharva* (art of music), skill of recital, essence of romantic sentiments, the art of writing lyrical poems and clandestine love affairs of Radha-Krishna from Gita Gobinda.

"Jat gandharvakalasu kousala manudhyana cha jat vaishnavam

Jachhrungaravivekatattwamapi jat kavyesu lilayitam.

Tatsarbam Jayadev pandita kaveh Krushnaikatanatmanah.

Sanandah Parisodhayantu Sudhiyah Sri Gitagovindatah."

In Gitagovinda Sri Jayadev has not only embellished his lyrical poems with music and melodious versifications but also with philosophy, metaphysics, ontology and mysticism. His music is meant not only for the purpose to please but to enlighten through entertainment creating aesthetic emotions, a sense of spiritual love, supreme beauty and perpetual peace. Therefore Gitagovinda has maintained ascendancy since it is written.

A palm-leaf manuscript of Gitagovinda written in Odiya script in 18th century is preserved in National Museum, New Delhi. In which, the icons of Lord Jagannath, Balabhadra and Subhadra are drawn in letters.

In Ragamala painting, we find *Ragaputra Kalinga* (Kangra, pahari, circa AD 1790) which is analogical with a stanza in the 12th canto of Gitagovinda.

"Paryankikrutanaganayak aphanasrani maninagane

Sankranta pratibimba sanklanayabibrat bibhubikriyam.

Padambhoruhadharibaridhi sutam kshyanam didrukshyuh sataih.

Kayabyuhamiba charannu pachitakuto harih pata bah."

The above stanza written in sanskrit by Sri Jayadev has been translated by Adwin Arnold as under -

"Hari keep you ! He whose might,
On the king of Serpents seated,
Flashes forth in dazzling light
From the great snake's gems repeated.

Hari keep you ! He whose graces,
Manifold in majesty, -
Multiplied in heavenly places -
Multiply on earth to see

Better with a hundred eyes
Her bright charms who by him lies."

Sri Jayadev's Hari means Srikrushna is seated on the hood of the king of serpents with a flute and lotus. Through the dazzling flashes of gems in the hoods, Hari wants to see Lakshmi in his uncounted eyes. Probably for that he took multiplied shapes. "Let him save you." A stone made serpent with seven hoods is found in the village Kendubilow, Khurda district (erstwhile Puri), the birth place of Sri Jayadev. This indicates that Ragaputra Kalinga is a native raga of the then Kalinga music, now known as Odissi.

The quintessence of Odissi music is discerned in the intrinsic vision of the learners and listeners, who repose in Gitagovinda, for its traits like composition, improvisation, raga repertoire, treatment of rhythms and rhymes, usage and genre. Sri Jayadev has not only originated a specific music tradition, systematic form and definite melodic pattern, raga-tala repertoires but also built a socio-cultural community. The purity, sanctity and characteristic features of Odissi music have been enriched, refined and pervaded its horizon through Gitagovinda of Sri Jayadev. We have the first evidence of Odissi music in an articulated and systematic form from the versifications of Gitagovinda. This sent and seer, poet and musician, Sri Jayadev was born at Kendubillow of Odissa. We adore him as the progenitor of Odissi system of classical music. Mr. HA Popley said in his work, 'The Music of India' (1st edition 1921) that "The first north Indian musician whom we can definitely locate both in time and place is Jayadeva, who lived at the end of twelfth century. He was born at Kendula, near Bolpur, where lives today the poet Laureate of Bengal and modern India. Kendula still celebrates an annual fair at which the best musical pieces are regularly performed. Jayadev wrote and sang Gitagovinda, a series of songs descriptive of the amours of Krishna, and so belongs to the number of India's lyrical songsters connected with *bhakti* revival. Though each song has the name of the raga and tala to which it was sung these are not intelligible to-day to Indian musicians."

By the time (1921) Mr. Popley wrote the said text, probably no modern Odiya scholars have protested the dubious information about birth place of Sri Jayadev although he belongs to Odissa. However now many researchers, scholars, poets, pandits and musicians of Odissa as well as West Bengal have clarified with supporting evidences that the real birth place of Jayadev is Kendubilow of Khurda district (erstwhile Puri), Odissa.

As per version of Mr. Popley if Jayadev is the first north Indian musician, then why he is not recognized as the progenitor of Hindustani system ? Yes, it is a fact that Gitagovinda is recited in all parts of India including the north and south. It may be said that music of ancient India is not intelligible to many extents, but not Jayadeva's music, which is regularly being recited in the temple of Lord Jagannath as a daily ritual as well as in all corners of Odissa. If there is doubt every body is free to make further research and study to accentuate the truth. When Sri Jayadev is an Odiya and his Gitagovinda is set to native ragas, talas and sung according to Ardhamagadhi padasrita giti, Bhinna swarashrita giti, Odissi vocal which follows it's traits and tradition is also classical. Truly Odissi vocal is classical and it is a different system from Hindustani and Carnatic. Therefore, Sri Jayadev is the progenitor of Odissi music.

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Poetic Beauty of Jayadeva's Gitagovinda

Prof. Raghunath Panda

The *Gitagovinda* is a coherent Sanskrit Kavya composed by Jayadeva in the 12th century in Orissa.[1] Poetry is the highest form of all arts.[2] In *Gitagovinda* we not only come across refined poetry but also excellent musical compositions in different tunes (*ragas*) and talas (beating in terms of time units). Regarding the poetic style of *Gitagovinda* critics and historians of literature are found confused. As such Hassen considered the poem as a lyrical drama and Jones called it a pastoral drama. Levi regarded it as an opera and Pischel placed it in the category between song and drama. Schroder regarded it as a refined yatra. Keith equates it with the festival plays in Bengal[3] which resembles the *rasa* of Mathura, where the short story of krishna lila is shown accompanied by song and music.[4]

Further, due to the division of *Gita Govinda* in to cantos (Sarga), Keith pointed out that it has belonging to the generic type of *kavya*.[5] S.K. De observes that "as a creative work of art, it has a form of its own and it defined conventional classifications."[6]

The Present Observation :

Undoubtedly, the *Gitagovinda* is an original piece of small Sanskrit poem of unique character which defies the traditional settings of *Khandakavya* or *laghukavya* of the genre of *meghaduta*. It does not confirm to *muktuka* type, since it has got a connected subject matter throughout. The poet Jayadeva, himself calls it a *prabandha. (etam karoti jayadeva kavi prabondham)*. So far as the division of *sarga's* or cantos are concerned, the design of a *mahakavya* is found in it.

Some commentators and critics have also not hesitated to call it a *mahakavya*.[8] It is divided into 12 cantos in which traditional verses in traditional metres are found intermingled with songs having different popular *ragas* or tunes to be sung by specific *talas*, etc. The general description are found in metres like *vasantatilaka*, *Sragdhara*, *Sikharini*, etc; where as the portions depicting emotional and subtle feelings of human heart are mostly presented in popular *ragas* or tunes like *Malavagauda, Gujjari, Ramakeri, Vasanta* and so on.[9]

Conclusion on its Genre :

Considering the emotional factors relating to flowing human spirit studded with songs, we are inclined to put it at par with the modern western lyric with an unique indegenous Indian musicological garb. Thus it can be said a *Gitakavya* or *Gitikavya* par excellence.

In Indian aesthetic tradition *rasa, dhvani, riti* and *Guna, Vakrokti, Awitya* and above all

ramaniyata or total attractiveness have been estimated as the essence of poetry by different rhetoricians and their followers from time to time. Among all of them *rasa, dhvani* and the *ramaniyata* traditions hold good and are more appreciated by the connoisseurs of literature.

'*Rasah*' has been derived as "*rasyate asvadyate iti* or *asvadayanti manasa tasmannatya resasmrta.*"[10], which is relished in the mind. The term *rasah* finds mention for the first time in the *Taittiriyopanisad*[11] in connection with the interpretation of creation, the manifestation of *Sat* and the principle which enjoins for blissful conditions of the medicant. He should know Him, realise Him in the self, which enables oneself for realisation of eternal happiness. By way of imitation the same term has been adopted in literature which quite befittingly has been described as *brahma & vadasuhodara.*[12]

The western concept of Aesthetics not only includes the relish of *rasah* (though not said in that term) but also accepts any aspect of literature which pleases the mind of the connoisseur with its living impact. It is just the other way round put by Magha as :

Ksanam ksanam yannavatamupaiti tadeva rupam ramaniyatayah /

Hence, not only the amount of *srngara hasya* or *karuna* displayed and relished in our present work *Gitagovinda* attracts us for examination but also the beauties of the depiction of feminine charm, descriptions of the nature, dialogues with brevity and emotions enrich the aesthetic experience of the reader or audience and critic as well.

In Indian aesthetics *Rasah* enjoyes a prominent place in literature. Here, in *Gitagovinda* as indicated by the poet propitiates the erotic understanding as well as the devotional fervour of the readers.

Yadiharismarane Sarasam mano adivilasakatasukutuhalam /Madhura Komala-kanta-padavalim Srnutada-jayadeva sarasvatim // Gita Govinda 1/3

It is also said as good saying *srngaricet kavih kavyam yatam rasahmayamjagat.*

The whole kavya is replete with erotic descriptions since the subject matter of the kavya constitutes the slender plot of separation and union of *Radha* and *Krsna* in Vrndavana occuring in only less than two days time. Besides, the two prayers offered to Lord Jagadisa, the plot begins with the revelling of Krsna with the cowherd-women in the mirthful spring season, which begins with the sloka :

anekanariparirambha - sambhrama
sphuranmanohari vilasalasam /
murarimaradupadarsayantayasau
sakhi samaksam punuraha radhikam// 1/37

Then the whole fourth *prabandha chandana charcitanila kalevara* etc, is full of *Sanbhogasrngara* or erotics in union where Krsna freely mixes with these beautiful women dancing, singing and rejoicing in whatever pleasant manner he likes. For example -

'Slisyati kamapi cumbti kamapi kamapi ramayati ramam / pasyati sasmitacaru paramaparamanu gachati vamam // haririha mugdhavadhunikare vilasini vilasati kalipare. 1/44

The whole song has been summerised in the subsquent verse by the poet in the *sardulavikridita* metre -

visvesam anuranjanena jayayann anandam
indivara sreni - syamala - momalair
upanayann angair arun - gotsavam / sva-
cchandam varasa-sundaribhir abhitah
pratya-ngam alingitah. - Srngarah sakhi

murtimaniva madhau mugdho harih kridati / Gita Govinda, 1/46

It has been translated by B.S. Miller in the following way :

When the quickens all things
To create bliss in the world,
His soft black sinuous lotus limbs,
Begin the festival of love.

And beautiful cowherd girl's wildly
wind him in their bodies
Friend, in spring young Hari plays
Like erotic mood incarnate.

Again *Sambhoga-srngara* occurs in the remembrance of *Radha* of the past amorous activities in the sixth song where she requests her companion to do the needful for her union with *Krsna*. According to the poet -

nibhrta-nikunja-grham gataya nise rahasi-niliya vasantam/ cakita-vilokita-sakala-disarati-rabhasa-bharena hasantam // Sakhi he kesi - Mathanam udaram.

sakhi he kesi-mathannum udaram. ramayamaya saha madhuna-manoratha-bhavitaya savikaram/ 2/11

The next situation where erotic union gets highlighted in a hypothetic union of *Krsna* with a youthful woman to whom *Radha* thinks to be more attractive than her due to her envy in the song No.14 sung in tune of Vasanta and reads like :-

smarasamarocitaviracitavesa galitakusumadaravilulitakesa kapi madhuripuna vilasati yuvatiradhikaguna 6/13

The same context continues in the subsequent 15th song in *Gurjjari* tune. The text of the first line is -

Samuditamadane ramanivadane cumbanavalitadhare Mrgamadetilakam likhati sapulakam mrgamiva rajanikare/ ramate yamunapulinavane vijayi murariradhana. 6/22

Further, excellence in union can be marked in the advice of the companion to *Radha* while she impells her for rendezevous with *Krsna* in Song No. eleven for example :

Urasi murarerupahitahare ghana iva taralavatake/ tadidiva pite rativiparite rajase sukrtavipake// vigalitavasanam parihrtarasanam ghatala jaghana mapidhanam / kisalayasayane pankajanayane nidhimiva harsanidanam //

5/12

The climax of erotic union occurs in the 22nd and 23rd songs and subsequent verses. For example :

Maranke ratikelisamkularanarambhe taya sahasa prayam kantajayaya kincidupari prarambhi yatsambhramat / nispanda jaghanasthali sithilita dorvallirutkampitam vaksyo militamaksi paurusarasah strinam kutahsidhyati // 12/10

Erotic in separation or *vipralambha* is the real life force of the erotic sentiment without which depiction of erotics never attains its full growth (*na vina vipralambhena srngara pustima-snute*)

Vipralambha in *Gita Govinda* begins with the remorse of *Radha* when she returns to her bower after finding *Krsna* revelling with other cowherd women. This is reflected from the beginning of the second canto, in song five and the subsequent verse. They are the verse *viharativane-radha* and so on. The song "*sancaradadharasudha-madhuradhvani"* and *Ganayatiguna-gramam* etc. reflect the typical mood of Radh. The feeling of *vipralambha* on

Krsna is well expressed in the whole third canto which is evident from the verses like :

itastatastam anusrtya radhikam

ananga bana vranakhinna manasatra

krtanutapah sa kalinda-nandini

tatanta-kunje visasada madhavah // 3/2

The following *mamiyamcalita vilokya vrttam vadhunicayena* reveals the same feeling in a vivid manner.

The best expression of *Krsna's* feelings in separation is expressed in the subsequent five verses beginning from *hrdivisalata haro* to the verse *bhrupallavam dhanurpangatarangitani*. To cite just one example through *virodhabhasa alamkara* shall be captivating for the readers :

bhrucape nihitah kataksa-visikho nirmatu marmavyatham syamatma

syamatma kutilah karotu kabari-bharopi marodyamam

moham tavaayam ca tanvi tanutam bimbadharoragavan

sad-vrttah stana-mandalas-tava katham pranair mama kridati // 3/3

Some people often blame Jayadeva under the charges of depiction of sensuality for the lines like "*pinapayodhara-parisara-mardana - conca lakarayugasali* etc. In answer to which it can be said that *srngara* really generates the highest pleasure among the relish of all the sentiments, according to Anandavardhana -

Srngara eva madhurah parah prahlladano rasah / tanmayan kavyamasritya madhuryam pratitisthati // srngare vipralambhakse karune ca prakarsavat / madhuryamardratam yati yattatradhikam manah Dhvanyaloka, 2/7-8.

Hence, the allegation regarding sensuality does not stand valid. On the other hand the enormous popularity of the text tells a different story rather in contrast to the said allegation.

The Popularity of the Gitagovinda :

Due to the popularity of the *Gita Govinda* more than ninety commentaries and 132 imitations on this *Kavya* have been recorded.[13]

Moreover, the songs of *Gita Govinda* are enacted in many classical dance forms like the *odisi*, the *Manipuri*, the *Bharatnatyam* and so on.

In the worship of Lord *Jagannath* a specially hand-cooven silken cloth named *Gitagovinda Khandua* is offered to the deities in the great temple at Puri. The prayer songs of *Gitagovinda* are charted every night of ritual just before the deities go for asleep and attired in *badasimhara vesa*. Regarding the chanting of the songs of the *Gita Govinda* in the daily service of the deities, there is a definite proclaimation of king Prataparudradeva in the form of an inscription on the left side of the jayavijaya door-way, written in Oriya language and script in A.D. 1499.[14]

Riti

Ritis are usually of four kinds in Sanskrit literature, they are *vaidarbhi Gaudi pancali* and *Lati*. In *Gita Govinda* Jayadeva makes use of *Vaidarbhi* and the *Gaudi* styles. Verses like "*Ganayati guna-gramam bhamam bhramadapi nehate*" or "*recaya kucayo patram citram kurusva kapolayor*" can be cited as examples of *vaidarbhi style,* whereas "*unmilanmadhugundha lubdhamadhupa-vyadhutacutan kura*" etc. can be put-forth as example of *Gaudi.*

But one thing more regarding style of Jayadeva is striking that besides these verses in traditional metres he has added twenty-four

beautiful and melodious songs in different tunes or *ragas* which can be cast in classical odisi music. These *ragas* are *Malava, Gursijari, Vasanta, Karnata* and so on keeping in view the sonorous and sweet dictions, the poet himself calls his composition as "*madhura komala kantapadavati"*. For example - "*candana-carcita-nilakalevara-pitavasana vanamali / Kelicalanmanikundalamanditaganda yugasmita sali / haririha mugdhabadhunikare vilasini vilastic kelipare"*/ 1/38

Riti depends on the qualities of words or *Guna* (both *sabda guna* and *Arthaguna*). Hence obviously for generating *vaidarbhi* style all the *Gunas* required to be present according to the ancient rhetoricians believe only *madhurya* type of *Guna* alongwith softer use of words give rise to the *Vaidarbhi* style. From the beginning to the end Jayadeva stands faithful to his declaration of composing the "*madhura-komata-kanta-padavali"*..

The Alankaras

As regards the use of *alankaras* Jayadeva is a superb artist. There is almost in every verse and song the dancing effect of *Anuprasa* touches the sense of the ears. May it be *'ca'kara* in "*vagdevata caritacitritacittasadma"* or *'Ma' kara* and *'dha' kara* in "*unmilanmadhu-gandalubdha*" etc.[15]

Among the *Arthalankaras Upama, Rupaka, Utpraksa, Kavyalinga, Visesokti, Vyatireka, Dipaka, Arthantaranyasa, Samuccaya, Anumana, Bhrantiman,* etc. are introduced.

To cite just one example of Bhrantiman shall be quite heartening to test one for the relish of the connoisseurs :

hrdibisalataharo nayam bhusangamanyakal kuvalayadala'sreni kanthe na sa garaladyutih / malayajarojao nedam bhasma priyarahite mayi prahara na harabhrantyananga krdha kimudhavasi // 3/11

Musical Niceities -

Jayadeva at the introduction of his kavya *Gita Govinda* informs his readers that he was going to compose a *prabandha kavya, etam karotiJayadeva kavih prabandham).* 1/2

Prabandha is a veriety of *Khandakavya* at the same time *prabandha* is also a veriety of musical piece. Since Jayadeva's *Gita Govinda* abounds in a large number of songs and every song is titled as *Prabandhas,* viz *-prabandha-I, Prabandha-II* etc. it is nearer to the *prabandha* song type of *kavya*, rather than a *prabandha* in contrast to the *muktaka* variety. *Prabandha* has been defined in *Sangita cuamani* as :

caturbhidhatubhih sadbhi'scangair yasmat prabadhyate / tasmat prabandhah kathito ....// 16

The *prabandha* songs have several details and due to its importance sarngadeva has devoted a full chapter on the *prabandha* songs in his *sangita-ratnakara*, an ex-haustive treatise on musicology. The musicological texts written in Orissa like the *sangitakalpalata, sangitarnavacandrika, Gitaprakasa* etc. - all of them have cited examples from the *Gita Govinda* in appreciation of its musical value.

Its influence on the regional Sanskrit and Oriya Litarature

Gitagovinda, has widely excercised its influence on the later literature to such an extent that it can be felt from the Sanskrit authors like Purusottama Deva, Divakara Mishra, Raya Ramananda Sitikanthakavi and Oriya writers like Abhimanyu Samanta Singhara, Upendra Bhanja, Dinakrsna Das, Kavi Surya Baladeva Rath : One and all have been sufficiently influenced by the

memorable lines and songs of the model *Gita Govinda*. That is why Orissa has developed a rich, profound and highly entertaining lyrical, musical as well as lyrico-dramatic literature of significantly commendable dimensions.

Covering all the aesthetic aspects of *Gita Govinda* shall constitute a voluminous work, therefore lack of scope in a single paper forbids us to delve deep and discuss extensively here at this insant.

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2. K.C. Pande; *comparative Aesthetics*, Vol.I, p-1.
3. Obviously based on the errorneous belief that Jayadeva belonged to Bengal.
4. A.B. Keith, *A History of Sanskrit Literature,* p.191.
5. *Ibid.*
6. S.K. De; *Indian studies past and present,* p.647.
7. *Gita Govinda,* I.2.
8. Ref. *Gita Govinda* with *Sarvangasundari* and *Srutiranjani,* commentaries ed.B. Panda, Deptt. of Culture, Govt. of Orissa, Bhubaneswar, 1985.
9. In some editions of *Gita Govinda* the forms or *svarupa* of different *ragas* are also described.

   For, example, *malava-raga* is depicted as *nitambini-cumbita-vaktrapadma sukadyutikundalavan pramatta/ sangitasatam pravisan pradose maladharo malavaragaraja // Gg,* Manamohan Press, Cuttack, no date, p.81.
10. *Natyasastram*, Ch. VI. 38.
11. *rasam hyevayam labdhavanandibhavati / Taittiriyopanisad*, Ramakrishna math, madras, 1965, p.116.
12. *Sahitya-Darpana*, Ch.III, 2.
13. See, Raghunatha Panda, *Orissa's Contribution in Sanskrit Lyrics,* Abhijeet publications, Delhi-94, pp.82-123; Suryamani Ratha, *Gitagovindam* (ed) with *Rasikarangada* commentary; introduction; Banamali Rath, *Iminations of the Gitagovinda*, Kalyani Prakasana, Berhampur.
14. Manmohan Chakravarti, "Uriya inscriptions of the 15th and 16th centuries." *Journal of the Asiatic Society of Bengal,* 62, pt.I (1894), 88-104; see, K.C. Misra, *Cult of Jagannath*, pp.54-55.
15. *Chekanuprasa*; 1.2, 5, 6, 10, 26, 27 etc.; *vrttyanuprasa,* 1.1, 2, 9, 12, 13, 15 etc; *Antyanuprasa*; 1.5, 8, 39, 42 etc.
16. R.N. Panda; *Orissa's Contribution in Sanskrit Lyrics,* p.105.

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The French School in Balasore, Orissa Till September, 1947

K. J. S. Chatrath

I had been in Orissa since 1967 but had never heard that in the past there was any French School there. It was only in 2000, that when in the course of my research on the French Loge at Balasore, I visited that town that this fact came to light. Accompanied by the District Collector, I went around the area where the French Loge stood in the past. We talked to some old people of the area. One of them, a relative of the erstwhile teacher in the French school Padma Lochan Bindhani, gave valuable information about the school and shared some photocopies of the correspondence about the school with the then French authorities.

These are letters written by the successive French Administrators of Chandernagor to Padma Locahan Bindhani, the teacher of the French school at Balasore. In fact in the later years, this school was the only visible manifestation of the French legacy of the Loge there. These letters, in French, short and to the point, cover the period 1940-1945. Though these relate to the matters connected with the running of the school, they do throw light on some social issues of the period in that area.

But first a general view of the school education in Balasore in the nineteenth century may be takeninto account. By the middle of the Nineteenth century, Balasore became an important point in the educational map of Orissa. The American Baptists founded an English School in 1853 and a High school was established by them in 1893. The first English High School known as Baleshwar Zilla School was established by Government here on 1st November 1853. A distinguished person of the area, Raja Baikunth Nath Dey Bahadur was a champion of the English language and founded an English school at Barabati in the centre of Balasore town. Subsequently the school was shifted to Malikaspur and was raised to the entrance standard in 1853. Interestingly Raja Baikunth Nath was also the lessee of the French Loge for quite some time.[1] In fact inhabitants of Balasore had been pressing the British for it for quite some time. With the opening of this school, Balasore became one of the 3 towns in Orissa to have such a school- the other two being at Cuttack and at Puri. The exact date/year of the setting up of the French school in Balasore is difficult to trace. But records do show that the French were giving regular aid to the primary school located in French Balasore till their departure in 1947.

This correspondence between Bindhani, the teacher of the French school and the French authorities throws light on a number of issues. Let us take a look at some of the information coming out of this correspondence.

In October 1940, the teacher of this school was informed that the amount of the yearly school allowance was being brought to Rs.120/- for the year 1941. In order to get a flavour of the

set up, let us see copy of an order[2] issued by the French Governor at Pondicherry about this school. It shows how the school was being regularly and systematically funded by the French Government.

"The Governor of the Colonies Louis Bonvin,
Chevalier de la Legion d'Honneur,
Governor of French Settlements in India,
Member of the Committee for the Defence of French Empire.

Pondicherry, the 23rd February, 1943.

As per the provisions of the Ordinance of 23rd July 1840;

As per the provisions of the budget; Order;

Article 1.- A grant of Rs.200/- is granted to the school of the French Loge at Balasore for the year 1943.

As per the provisions of Chapter XIV of the Local Budget exercise, this grant shall be released at the end of each quarter.

Article 2.- The present decision will be registered and communicated for the information of all concerned.

Pondicherry, the 23rd February 1943.
Signed.
Louis Bonvin

Certified Copy :
The Head of Office.
Signed.
P. Brutinel

Copy to: Cabinet-1, Ist Bureau-1, Treasury -1, Additional Chander -1, Education Deptt. – 1.

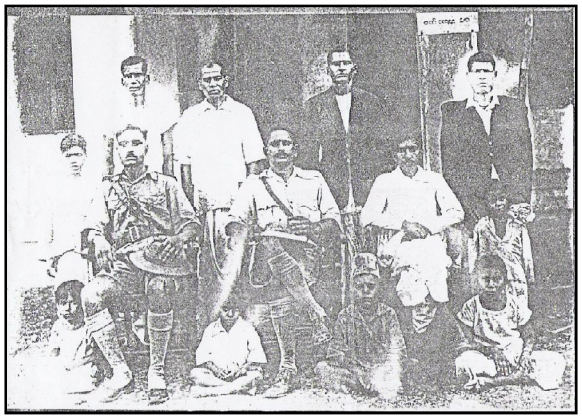
Pondicherry, the 25th February 1943.
Attested copy.
Sd/-

Taken note of.
Sd/- Bindhani
Dated 8.3.43.

Copy of a similar Order issued in French in 1945 [3] sanctioning a grant of Rs. 120/- for the year is also available.

There is an amusing letter written in January 1941 [4] conveying sanction for funds for the purchase of furniture for this French school.[5] The letter conveyed that His Excellency the Governor of French India had kindly granted a sum of Rs.180/- (subject to 10% deduction) to the French school for the purchase of school furnitures of Balasore. It advised that consequently a bill should be drawn in Padma Lochan Bindhani's name for the sum of Rs.162/-. To regularize this bill, he was asked to submit to the French Administrator, on the receipt of this letter, a list of articles to be bought for the school within the limit of the sum of Rs.162/- deducting Re.1- as 12/- for Money Order fees. It was made clear to him that all excess to this sum will not be paid. It was added at the end that these articles, when bought, will be verified by the District Magistrate, Balasore. This letter is amusing as it shows the interdependence of the French and the British India at the grass root level. Since the French did not have any functionary at the French Balasore, except perhaps a Sub-Inspector of Police called Brigadier, they involved the British District Magistrate of Balasore for helping in the purchase/verification of the furniture so bought.

We get an idea about the efficiency of the communication system in the areas of French India. For example there is a letter written in May 1941[6] sanctioning four days leave to Bindhani "to be enjoyed in Chandernagore". Delivery of this letter points out towards a quick system of movement of mail. Bindhani wrote and sent his application to Chandernagore on 15th May. The French Administrator there sanctioned it on the 17th of May and sent the letter. Bindhani received the letter in French Balasore on the 19th of May.



A photograph showing some students, teachers and Police Officials.
(Source : Late Bindhani's family)

The French involvement in this school did not limit itself to payment of a yearly grant. It had a fairly tight control over various aspects of its functioning. The yearly academic calendar for the school used to be communicated by the French Administrator from Chandernagore. In July 1941, Bindhani was communicated [7] the annual school academic calendar. It informed that:

(i) The school would remain closed on every Thursday;

(ii) Summer vacation would be from 16th May to 30th June.

(iii) Puja vacation would be from 25th September to 15th October, and

(iv) The Winter Vacation would be from 24th December to 7th January (next year.)

One may note that there was no teaching on one day in a week besides the Sunday, which is the French system. The traditional schedule in French schools even today involves teaching from Monday to Friday with no classes on Wednesdays and a half-day on Saturdays. This schedule remains one of the hotly debated issues in the French educational system.

The same letter also clarified that for the yearly subsidy of the school a sum of Rs.100/- only was sanctioned and not Rs.120/-. Out of this amount too, a sum of Rs.10/- had been deducted as levy, at the rate of 10% of the sum, as prescribed by the French Government. Bindhani had also made two requests - for contingency of Rs.10/- and a sum of Rs.5/- for the garden. He was informed that these matters would be submitted to His Excellency the Governor of French Colonies, at the time of the visit of the French Administrator of Chandernagore to Pondicherry. It shows that the French system was quite bureaucratic and also fairly tight fisted.

This set of letters show, the human face of the French at a micro level. We get to know of the French consideration for, and sensitivity to, the local religious and social sentiments from another of these documents. It seems that Bindhani and a few others had written to Massoutier, the French Administrator at Chandernagore asking for 3 days holidays for "Basant Puja". The response of the Administrator[8] was positive. Bindhani and others were informed that as a very special case, permission to celeberate "Basant Puja" from 24th to 26th March was accorded. This letter was sent care of the Brigadier (Sub-Inspector) of Police Post of Balasore showing that by then a policeman from the French side had been posted and had joined in the French Balasore.

Subsequently in the June of the same year, one Mohone Bindhani and others wrote to the French Administrator requesting for permission to celeberate the festival *'Raja Sankranti'*. The Administrator conveyed to them[9] that the permission asked for celeberating a Hindu religious festival on the occasion of *'Raja Sankranti'* [10] had been accorded for three days,

on the condition that it would be celebrated from sunrise to sunset and no event will be organised during the time of the "Black-Out" during the night. This letter too was sent care of the Brigadier (Sub-Inspector) of Police Post of Balasore. One comes to know that black out at night, due to the Second World War was being enforced in the French Balasore also.

Some letters reveal that emergency medicines were being supplied to French Balasore though the residents had access to the dispensary in the British Balasore too. There is a letter written in May, 1942 [11] by which Bindhani was told that as per his request a packet containing 15 grammes of compressed aspirine had been sent to him.

Bindhani, the Teacher again wrote to the French Chief Medical Officer at Chandernagore requesting for some more medicines. The following medicines were sent to him[12] from Chandernagore:

(i) Medicine for digestion: *Alcoolat de menthe* [13] X to XX drops per day in one ounce of water;

(ii) Medicine for throat and tooth complaint: *Glycerine iodee'* for touching.

In October of the same year Bindhani again asked for some more medicines. The Chief Medical Officer of Chandernagore sent him[14] 15 grammes of quinine bi-hydro-chlor tablets (to give 2 tablets per day for adults.). After two months Bindhani asked for anti-cholera medicines. The French Chief Medical Officer again obliged him by sending[15] 100 doses of anti-choleric bili-vaccine and asked him to send back, as soon as possible, the list of persons vaccinated.

It appears that in November 1944, Bindhani sent another letter to the French Chief Medical Officer at Chandernagore enclosing a list of medicines which he wanted to be supplied. Perhaps the French Chief Medical Officer was fed up with these repeated demands of medicines from Balasore and therefore, while supplying "Teinture d'Iode"[16] he advised Bindhani[17] to send in future the patients to the nearest dispensary for treatment which again shows the dependence on the British institutions.

The French finally handed over the French Balasore to the Indian government on 1st September, 1947. While handing over they formally pleaded for continuance of this school and the teacher. Mr. Bazin, the French Administrator at Chandernagore, wrote a letter to the District Magistrate, Balasore[18] stating, "There exists in this Loge a school aided by French Government. This aid will not be given from 1st. Sept., I recommend to your kind attention the teacher who is in charge of this school and who has always given entire satisfaction. I think it will be possible for you to maintain this school and ensure the education of the children of that locality."

It would be interesting to find out what action was taken by the Indian authorities on this parting request of the French authorities. It would be equally fascinating to know the subjects that were being taught in this school and weather French language was one of those subjects.

To sum up, we notice from this correspondence that the French school at Balasore was being regularly and systematically funded by the French Government and yearly academic calendar was being prepared by the French authorities and that there was dependence of the French on the British India. It also throws light on the efficiency of the communication system in the areas of French India. We also get the information that a black out at night, due to the Second World War was being enforced in the French Balasore also. And lastly it shows that the

French had consideration for, and sensitivity to, the local religious and social sentiments. While handing over they hoped that Indian government would maintain this school and ensure the education of the children of that locality and also formally recommended the retention of the teacher.

References :

(1) *Orissa District Gazzettes, Baleswar, Govt. of Orissa,1992, page 588.*

(2) *Order No. 226 dated 23rd February, 1943 of the Governor of the French Settlements in India Mr. Louis Bonvin sanctioning a grant of Rs.200/- for the year 1943 for the French School in Balasore Loge.*

(3) *Order (in French) dated 27th January, 1945 from Governor of Colonies Louis Bonvin sanctioning grant to the French School, Balasore. Translated by us from the original letter in French.*

(4) *Letter No. 975 dated 4th October, 1940 from Lieutenant J.M. Massoutier, Administrator of Chandernagore to Mr. Padamlochan Bindhani, Teacher of French School, French Balasore.*

(5) *Letter No. 32 dated 15th January 1941 from Lieutenant J.M.Massoutier, Administrator of Chandernagor, addressed to Mr. Padma Lochan Bindhani, Teacher of the French School, Balasore*

(6) *Letter No. 591 dated Chandernagore 17 May, 1941 from Lieutenant J. M. Massoutier, Administrator of Chandernagore addressed to Mr. Padma Lochan Bindhani, Teacher of French School, Balasore*

(7) *Letter No. 807 dated 12th July, 1941 from Lieutenant J. M. Massoutier, Administrator of Chandernagor addressed to Mr. Padma Lochan Bindhani,*

(8) *Letter No. 190 dated the 20th March, 1942 from Lieutenant J.M.Massoutier, Administrator of Chandernagor, addressed to M/s Mohana Bindhani and Group*

(9) *Letter No.386 dated 16th June 1942 from Lieutenant J.M.Massoutier, Administrator of Chandernagor to M/s Mohone Bindhani and Group.*

(10) *'Raja Sankranti' or the Swing festival or Mithuna Sankranti is a three-day festival starting on the first day of the month of Asara (June-July) from which the season of rains starts. It heralds the beginning of the agricultural year in Orissa.*

(11) *Letter No. 305, dated 9th May, 1942, from Lieutenant J.M.Massoutier, Administrator Chandernagor addressed to Mr. Padma Lochan Bindhani, Teacher of French School, Balasore.*

(12) *Letter No. 444, dated 29th June, 1942 (in French) from the Chief Medical Officer, Chandernagor, addressed to Mr. Padma Lochan Bindhani, forwarding medicines. Translated by us from the original letter in French.*

(13) *Something like "Pudinhara" in contemporary India.*

(14) *Letter dated 10th October, 1942 from the Chief of Medical Services of Chandernagore addressed to Padma Lochan Bindhani Teacher in the Balasore school sending him quinine.*

(15) *Letter No. 877, dated the 9th December, 1942 from the Chief Medical Officer, Chandernagore to Mr. Padma Lochan Bindhani, teacher in the French school at Balasore sending medicines.*

(16) *Tincture Iodine, consisting of a solution of iodine in ethyl alcohol; applied locally to minor cuts and bruises as an antiseptic.*

(17) *Letter No. 797, dated the 23rd November, 1944 (in French) from the Chief Medical Officer, Chandernagore to Mr. Padma Lochan Bindhani, teacher in the French school at Balasore sending "Teinture d'Iode". Translated by us from the original letter in French.*

(18) *Letter No. 1386 dated the 27th August, 1947 from Mr. M. Bazin, Administrator of Chandernagore to the District Magistrate, Balasore (Translation). Source : Orissa State Archives, Bhubaneswar.*

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Reverse Actions Against Global Warming

Dr. M. Mishra

Earth atmosphere contains certain gases called green house gases (mostly carbon dioxide), which keeps the atmosphere warmer. Global warming is a slow, and gradual warming of lower layer of the atmosphere due to increase in concentration of manmade green house gases primarily by carbon dioxide and lesser extent by methane, nitrous oxide and chlorofluorocarbon etc. These gases trap infrared radiation, which is the heat radiation that cools the earth, which ultimately raises the temperature of the lower layer of the earth atmosphere. The atmospheric concentration of carbon dioxide and methane has increased 31% and 149% since beginning of the industrial revolution in mid 1700s. Fossil fuel burning has produced 3/4th of the carbon dioxide from human activity over past 20 years. Most of the rest is due to land use change particularly deforestation. Global surface temperature has increased $0.74 \pm 0.18^{0} c$ during last 100 years ending in 2005. Inter Governmental panel on climate change summarized a further increase in temperature 1.1 to 6.4^{0}c during 21st century.

Consequences of Global Warming

Due to rise in temperature of the earth the food production will decrease at a rate of 10% with increase in temperature of 1^{0}c leading to hunger and starvation. Other phenomenon as like heat waves and unusual warm weather, (2) ocean warming, sea level rise and coastal flooding (3) glacier melting (4) plant and animal race shift and loss of lives (5) unusual downpours, heavy snowfall, flooding, drought and fire (6) prevalence of diseases are likely to increase due to global warming. World is experiencing shortage of food now a days. Out of 600 crores of people 300 crores of people are under-nourished, Heat waves has killed 1600 people in India, 35000 people in Europe in 2003. Ice and snow cover has shrunk 30% in Himalayas over 30 years.

Global warming has created a lot of concern to scientists for survival of the population on the earth in 21st century. Government Chief Scientific Advisor, UK has advised to take flood protection of agriculture and coastal erosion. European union is committed to limit emission of green house gases so that, temperature will not rise more than 2^{0}c. David king, Chief Scientific Advisor to British Government told that, global warming is most severe problem and even more severe than terrorism.

Reverse Actions Against Global Warming

Earth has experienced warming and cooling many times in the past with drastic changes in the live forms. Let us not invite such changes to our present earth and let the earth be sustainable

to all its living beings through application of scientific process. All matters in the earth are constant. The total carbon content of the earth whether it is present in the soil, in plant or in atmosphere is also constant. But due to human intervention, the carbon concentration in the form of carbon dioxide, methane etc., has been increased in atmosphere in comparison to its presence in soil and plant which causes global warming. Our activities may be directed to reverse the process so that, the carbon dioxide present in the atmosphere will be buried in the soil and plant to maintain its optimum level in atmosphere, so that the temperature of the earth atmosphere will not increase. This may be called as "Reverse Action".

The following steps may be taken to reduce the carbon dioxide concentration in the earth atmosphere and thereby reducing global warming.

Steps to Reduce Global Warming

Reduction of Carbon Dioxide Emission From Fossil Fuel Burning

The fuel efficiency of the systems need to be increased, high fuel efficiency engine need to be developed and subsidized by interference of the Govt., use of non conventional energy sources like solar, water and wind need to be popularized and subsidized for large scale adoption.

Reduction Of Carbon Dioxide Emission From Industrial Sources

The industrial carbon dioxide emissions have to be trapped in form of minerals through suitable processes to form calcite or dolomite or other such minerals and organic acids and chelates. Industrial wastes need to be recycled through appropriate processes and incentives should be given for use of such process by interference of the Government.

Reduction of Firing

Forest fire or Firing of crop wastes need to be banned as the organic materials are burnt to produce carbon dioxide. Awareness has to be created for preparation of compost if such waste materials are needed to be removed from field. Composting helps in delaying the process of release of carbon dioxide to the atmosphere and helps in maintaining fertility status of the soil. Incentives have to be given for composting of residues of field crops or forest residues for enhancing environmental protection.

Carbon Mining

Carbon helps in restoring the fertility of the soil. The crop residues can be incorporated into the soil after harvest of the economic yield. Continuous such process will enable in cultivation of crop in zero tillage and minimum tillage. The incorporation of organic residues increases the heat capacity of the soil, thereby reduces the infrared radiation from earth.

Afforestation

Plants convert carbon dioxide present in the atmosphere into carbohydrates through the process of photosynthesis. Rapid afforestation of wastelands will not only reduce the carbon dioxide concentration in the atmosphere but also will intercept the light falling directly on the earth surface which reduces heating of the lower atmosphere.

Hence, the afforestation has to be carried in all waste lands, Panchayat lands, village lands and waste lands etc. so that sunshine will not fall directly on the earth surface.

Agro forestry Systems :- Due to increase in global temperature, the yield rate of the crop had showed decline trend and incidence of pest and diseases has been increased. In order to reduce the atmospheric temperature in crop field, Agro

forestry systems should be practiced in all the agricultural lands through planting of straight growing forest species on the boundary or at distance of 8-10 m apart, thereby creating a microclimate suitable for the agricultural crop cultivated in the interspace.

Creating Water Bodies: - Water has high heat capacity which absorbs heat thereby reduces the atmospheric temperature. Large scale water bodies should be created to conserve run off water in the land surface. Soil and water conservation measures need to be followed in all lands to reduce soil and water erosion and to increase heat capacity of soil.

Efficient use of Water:- Due to growing of population, the per capita water availability has been reduced from 2209 cum. in 1991 to 1703 cum in 2005. The projected water availability will be 1340 cum in 2025. For production of one tonne of food grain 1000 ton of water will be required. In order to sustain the increasing population, there is greater need for efficient use of water through use of sprinklers and drip irrigation systems.

Aerobic Rice Cultivation: - Rice is the staple crop grown in wetland or water logged land which emits methane which also contributes to the global warming. Growing of rice in System of Rice Intensification (SRI) technique and aerobic rice cultivation, there will be efficient use of water as well as reduction of emission of methane.

Recycling of Waste Material: - Waste material produced from industries and agriculture need to be reused to produce other useful materials. This will help in preservation of environment and prevent pollution of environment. Sewage water and waste water coming from the industries need to be cleaned and reused in agricultural activity.

Organic Farming :- Organic farming emphasizes on cultivation of crops with the inputs available in nature through use of green manuring, green leaf manuring, Biofertilizer, BGA and Arolla etc. The organic farming practices help in building soil fertility through fixing atmospheric Carbon dioxide and Nitrogen in to the soil. This helps in reduction of carbon dioxide from the atmosphere.

Checking Radiation from Building: - Urbanization has increased construction of buildings which emits radiation that also increases the temperature of the atmosphere. Hence, the roof of all buildings should be covered with Potcultured plants or covered with mulching material for preventing radiation. The side walls of the building also should be covered by shade of plants.

Research Support: In view of global warming scenario, there is need for massive research for reduction of carbon dioxide emission, carbon dioxide fixation, recycling of waste material, efficient use of fossil fuel and enhancement of yield of crops under temperature stress etc.

Enactment of Laws: There is need to enact laws to suit to ecofriendly practices, creation of awareness on environment protection and popularization of technology for reduction of carbon dioxide emission. The present atmospheric concentration of carbon dioxide 385 parts per million by volume which is highest in 800000 years which will increase to 541 to 970 ppm by 2100 due to fossil fuel burning as per IPCC special report on emission scenario. Hence all our actions need to be projected to reverse the carbon dioxide emission and global warming to save the earth from disaster.

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Food and Nutritional Security in Present Day Agriculture

Dr. H.P. Misra

India has 18% of the world's population and 15% of the total livestock. Of the country's total geographical area of 329 million hectares, 174 million hectare is degraded. But, India is bestowed with extremely diverse agro-ecological conditions that provide most conducive environment for growth of diverse flora and fauna. Approximately 12% of world's flora and 7% of world's fauna is found in India for which the country is recognized as one of the mega centres of bio-diversity. It is estimated that global population by 2050 will be around 11 billion and India will emerge as most populous country with 1.5 billion people. With the increase in industry, roads for communication, housing and urbanization, the per capita availability of land is decreasing day by day. To feed the burgeoning human population, obviously the demand for food will escalate. In this context we will need to search for newer plants and look for newer genes in order to ensure food and nutritional security and increase the farm productivity. In addition to that most of the agro products are found to contain pesticide residues which harm human health and make us incompetent in the global market. Thus, emphasis should be given not only to increasing productivity of crops but also producing quality food.

Crop diversification :-

Rice is cultivated in 113 countries of the world and plays a variety of roles that are related to important aspects of food security as well as to rural and economic development. It is the principal crop of Asia and rice based production system and their associated post-harvest operations employ nearly 1 billion people in rural areas of developing countries. When the developing countries are considered together, rice provides 27% of dietary energy supply and 20% dietary protein intake. In Asia alone, over 2 billion people obtain 60-70% of their energy intake from rice and rice products. Over 90% of the world's rice is produced and consumed in Asia. It also is a staple food of India and Orissa occupying highest area under any crops. In the last three decades, 632 varieties of rice were developed and released for commercial cultivation in India. In Orissa rice workers in the Orissa University of Agriculture and Technology (OUAT) and Central Rice Research Institute (CRRI) contribute a lot in developing high yielding, insect pest and disease resistant varieties of rice suiting to various agro-ecological situations. That resulted in huge production of rice leading to disastrous sale. On the other hand due to less cultivation and production of pulses and oilseeds their per capita availability is decreasing day by day and price is

increasing. Thus, there is an urgent need for crop diversification. Therefore, now emphasis is on diversifying to fibre crops (cotton), oilseeds (groundnut, sunflower, mustard, sesamum etc.), pulses (rajmash, arhar, mung, bean, urd bean etc.), fruits and vegetable crops, floriculture and medicinal and aromatic plants.

The importance of fruit crops in human nutrition is well known. As per the Indian Council of Medical Research (ICMR) the per capita consumption of fruits should be 120g / person / day to ensure the nutritional security of projected 120 crore population in 2010. India needs to produce 74.56 million tones of fruits by 2011 – 12. Threfore, Government of India is implementing a scheme for integrated development of fruits under macro management scheme and on an average 25% of the funds are allocated under the scheme during the Tenth Plan period for the development of horticulture sector in the country.

Golden Rice:-

To meet the demands of increasing population and maintain self sufficiency, the present rice production level of around 89 million tones need to be increased up to 120 million tones by the year 2020. This is a herculean task. However, with the discovery of "Dee Geo Woo Gen" gene in rice crop improvement and increasing yield was possible in the Green Revolution Era. That was followed by hybrid rice technology which further increased yield. Recent advances in cellular and molecular biology have equipped the scientists with two innovative tools for crop quality improvement, *viz.*, recombinant DNA technology and DNA marker technology. Metabolic engineering for nutritional improvement in rice is another area which is receiving much focus now-a-days. Efforts are on towards bio-fortification of rice through conventional breeding and biotechnology to improve the lysine content of rice, reduce the prolamin proteins to enhance iron bio-availability and improvement of nutritional quality of super hybrid rice thus giving rise to anti-anaemia rice. From a study it was observed that on an average 30% of the world's population; mostly from underdeveloped countries suffer from iron deficiency. In India its prevalence is 40-50% in urban areas and 50-70% in rural areas. The victims are mostly children, women and pregnant women. Thus, development of this iron rich "ferritin rice" can alleviate anaemia problem through dietary intake.

In 2000, "golden rice"- a genetically modified rice crop was released which was claimed to boost yields of rice by 35% over the high yielding rice varieties of 20th century. The golden rice was rich in beta-carotene which the body converts to vitamin A. But, in the year 2005 British scientists developed a new strain of golden rice-2 that contains more than 20 times the amount of beta carotene than its predecessor, or enough to provide 100 per cent of dietary allowance of vitamin A from just 70g of rice, according to developers. The World Health Organization (WHO) estimated that vitamin A deficiency causes 5 lakh cases of child blindness a year and kills some 6000 people across South East Asia. This development will combat vitamin A deficiency in SE Asia.

Combined with this, marker assisted selection has been successfully deployed in rice for blast and BLB (bacterial leaf blight) disease resistance genes that will reduce huge loss in yield due to diseases. *Bacillus thuringiensis* (Bt) incorporated transgenic rice development in China has added insect resistance in rice varieties, besides traditional cross-breeding programmes by which number of insect and disease resistant rice have been developed in the past. Quality improvement in rice is not only confined to genetic

engineering but also through conventional breeding programme. Greatest achievement is improvement of Basmati rice. For this reason, since last five years India is exporting 0.5 / 0.7 million tones of high quality Basmati rice annually valued around Rs. 20,000 million.

Wheat:-

Wheat crop improvement started with the identification of "Norin 10" gene. In the last four decades plant breeders have developed number of high-yielding varieties with appreciable disease and insect-pests resistance. For that reason, India is presently one of the largest producers of wheat in the world with about 25 million hectare under cultivation and 60 million tones production. Of the total wheat 90% area is shown as bread wheat. But, now emphasis is on to increase area under durum wheat or macaroni wheat which presently accounts for about 8% of the area. Durum wheat has excellent resistance than bread wheat against karnal bunt – a serious disease of wheat limiting production in northern and north-west India. Its hard lustrous bold grains with good beta carotene content and resistance against brown rust will attract buyers in the domestic and foreign market.

Super Sweet Onion:-

Another breakthrough in quality improvement is the development of "Super Sweet Onion" developed in U.K. by Tisco fresh produce company. While cutting onion normally irritation of the eye occurs due to presence of pyruvic acid in it which mixes with the air and irritate the eye. As a result tears come out. But, the super sweet onion developed by the company bio-technically contain nearly half less pyruvic acid than normal and is grown in less sulphur containing soil. While cutting this onion no tear comes of the eye.

Golden Egg:-

During the year 1999 another stride has been taken in the field of animal science in creating a new type of transgenic egg with medicinal values. Ordinarily, eggs are viewed as detrimental to healthy hearts, because they are rich in cholesterol, which unduly damage their reputation as the most nutritive food ever created by nature. A raw egg contains about 500 milligrams of cholesterol in 100gram of its edible part, mostly the yolk, while a yolk in raw and dried form contains 1500mg and 3000mg per 100g of it, respectively. Therefore, consumption of egg raises its level in blood, thereby increasing the probability of coronary heart ailments. But, a team of scientists in Australia have developed "Golden Eggs" through genetic manipulation of hens which are heart friendly. In an experiment with a group of volunteers which were given one such egg per day were observed to have lower cholesterol level in their blood with no other side effects with this genetically modified egg.

Vegetables:-

Apart from fruits, vegetables play an important role in the balanced diet of human being by providing not only energy rich food but also premise supply of vital protective nutrients like vitamins and minerals. Micronutrient deficiencies have detrimental effects on human health. Nearly 2 billion people worldwide are iron deficient resulting in anaemia in 1.2 billion and more than 600 million people have iodine deficiency disorders. It is estimated that the requirement of vegetables per capita is 240g / day but, the availability is only 140g / day. Therefore, we shall have to produce more to meet the requirement. The improvements made over four decades of green revolution era in agriculture are selection of the indigenous varieties for higher yield and disease, insect pest resistance. Then came high

yielding cultivars and during last decade hybrid vegetables have dominated the market with much higher yield potential. Earlier, focus was on finding toxic properties of some chemicals present in vegetables towards human health, while recent research efforts are directed towards health promoting and chronic disease preventing properties. Frequent consumption of vegetables especially green and yellow vegetables is associated with decreased susceptibility to some forms of cancer. A diet rich in cruciferous vegetables (cabbage, cauliflower, broccoli, Brussels sprout, Chinese cabbage etc.) has been associated with inhibition of chemically induced carcinogenesis. About 100 different forms of glucosinolates have been identified in cruciferous vegetables which break down to isothiocyanates that act as anticarcinogens in human body.

If we take an optimistic view on overall developments made in the field of agriculture regarding food and nutritional security to every individual on this earth there is nothing to panic apprehending shortage of food in quantity and quality for the upsurging human population on the earth.

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Traditional Agricultural Wisdom for Sustainability in Tribal Areas

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Agriculture is the most primitive occupation of the tribal people. Though the people had changed their cultivation pattern from traveller's cultivation to settled cultivation, but some of the practices have remained unchanged among many group of farmers. The unchanged practices may be due to fact that they find the practices more sustainable. It is painful when somebody says the tribals are backward or primitive. It not only affects the sentiments of the clientele group but also equally affect the organizations working in those areas for their development. Hence, the technology should be transferred to them without affecting their sentiment. A number of appropriate technologies are generated by them and have become sustainable under their farming system.

The paper focuses attention to the practices of the resource poor tribal farmers that makes use of low cost renewable inputs, family and community labour for solving the food crises through their traditional wisdom which need documentation to make the future agriculture a sustainable one. Besides, effort has been made to gather necessary explanation on some of the practices followed by them. A few regular researches have been done to see whether their practices are based on any scientific basis; much other research work is yet to be started.

The study on the farmer's traditional wisdom on agriculture was initiated through non-random selection of respondents from eight different tribals of eleven Blocks of the undivided Koraput district, (For administrative convenience, Koraput has been divided into four districts i.e. Koraput, Malkangiri, Nawarangapur and Rayagada). Erstwhile undivided Koraput covers an area of 27,369.40 sq. kilometers which is richly inhabited by tribal community.

The respondents were selected from among different age groups, different working class group (basically they are farmers). *Mukhias*, *Disharies*, *Beju* etc. They have given necessary explanations on the continuity of their traditional practices. About 70% of the people of 30-50 age groups were flexible and they disapproved many of the traditional practices and wanted to discontinue those practices based on blind belief.

A typical tribal village is situated a little away from the main road and mostly inside the forest. Generally, the houses are constructed on the both side of a wide village road. The cowsheds are constructed on the middle of the road earlier. Now, they are having a cowshed in their house in front side or in the end of house row. This system has changed due to reduced number of wild animals and effective forest.

Most of the houses have some backyard and they raise a kitchen garden. Gradually, this kitchen garden extends to the field which again merges with the forest. The village has been set up where there was plain land and a stream. This selection of their dwelling place shows their intelligence and foresight.

Agriculture and the Religious Functions :

The tribals are very much religious. They offer rituals for Goddess *Dharani* (Earth) to provide them the best crop. They also pray '*Indra'* – the god of rain to shower timely rain for the crop. They worship '*Dharanimata'* before sowing the seeds in the field during *Baisakh*. Similarly, after a month of transplanting of paddy, they have Puja for filling up the grain by the grace of God. After the harvest of paddy, they have a ritual when they pray Mata Laxmi to be kind to them and bless them with a good crop. Even before going to clear the forest for jhoom cultivation (Slash and Burn Method), they usually pray God Mountain to sustain them.

Traditional Wisdom :

The tribals are intelligent and have made agriculture sustainable through their agricultural practices. Knowingly or unknowingly, they have created a balance between the environment and requirement. They hardly over-harvest anything from the nature or forest. Eventhough they sometimes starve, they never over-utilize the forest resources which is abundant; because they think for the future.

Mixed Farming :

Each and every tribal household keeps a few animals according to their size of the family. To make mixed farming sustainable, they harvest main crops. After harvest, they allow the cattle to graze in the field. In return, the animals leave the excreta which serves as the manure. They seldom milk the cow and they believe that milk is for the calf.

They keep the birds (Fowls) because they need 7 to 10 of those in a year for the different rituals to offer in sacrifices. The functions are observed in the winter to onset of monsoon. During the rainy season, they do not observe many functions. It is interesting to refer that the birds may damage the kitchen garden crops before these crops stand. Therefore, it is seen that, all birds are killed and devoured by the family members, leaving only one or two. Moreover, the birds would be eaten away by the wild dogs, foxes as the kitchen garden would be full of crops during the early part of the rainy season. But in the early winter, the new batch of chicks is seen in the villages. Usually, the people take them to the field so that the birds would devour the insects harmful to the crops. This cycle is not seen in the coastal areas of Orissa.

Jhoom Cultivation :

Now-a-days, the tribals are pushed up and up the hills. All the good fertile land owned by them in the valleys is near the streams now belonging to the non-tribal due to urbanization. The towns are coming up and industries are constructed resulting in the migration of the peace loving tribals farmers to interior parts of the forest. Ultimately, they have to depend on the uplands of the hill slope which can hardly give them a cropping during the rainy season. The land and produce both are not sufficient for them. Hence, they search for an alternate source for their sustenance. They grow upland paddy and other grain crops such as cereals and millets in the upland areas and grow pulses in the *bagada* (land cleared by them in the forest). They are conscious

that if the land will be left as such there might be soil erosion. They do not cultivate or plough the land, but dibble the seed with the help of a '*Gadi*' or of special hoe having one point, made up of wood. This minimizes soil erosion. Moreover, these crops cover the denuded forest area. It is customary with them to grow one or two crops in the hilly slopes in every 3-4 years. During this interval, the natural vegetation also covered the ground and the nutrient lost during the last crop is also regained by the deposition of silt.

It is seen that in late summer, just after one shower of rain, the tribal farmers usually go to the forest in search of the tuber crops; they harvest it by digging. But they refill the pit with the twig or piece of it which provide them the tubers in the next year. This is seen with arrowroot, yam, *bhata kanda, masiha kanda*, amorphophallus etc. Through these practices, the tuber crops continues to grow for years together in the same areas.

It can not be told that the tribals are destroying the forest. The felling of a fruit tree is an offence to the tribal communities. They treat the mango, mahua, jackfruit, salap and other fruit bearing trees as one of their own family members. But jhoom cultivation is a way of life. They cannot leave it unless they are engaged in other income generating works during the spring and the summer seasons.

Selection of Crop and Cropping pattern :

They practice crop rotation from time immemorial. Turmeric (*Curcuma longa*) is a cash crop mostly grown as annual crop, but sometimes it is also grown as a biennial crop, but after a turmeric crop they either leave that land fallow or grow a legume crop such as bold arhar (*Cajanus cajan*), blackgram (*Phaseolus mungo*) and after 2 to 3 years, they again grow turmeric in the same field.

They are very specific in the selection of crops. In the up-land, they grow Kuiri (*Panicum milliare*), a minor millet that gives only one quintal / acre. This yield is stable in any hazardous climatic condition and not affected by diseases and pests but the crop is ready within 60 days and it provides them food when they do not have anything during October-November. They say that Kuiri is like their eldest son who takes care of the old parents. Soon after Kuiri, they take another oilseed crop niger (*Guizotia abyssinica*) with the available moisture.

They can predict whether the paddy crop will give them better yield. If there will be rain at night and bright sunshine in the day, the crop will be wonderful; but if the opposite condition prevail the crop will fail. By seeing the intensity of the fruiting of mango, they can predict whether the paddy crop will be good. If there will be good mango crop next year, there will be good paddy crops too.

Besides paddy, they grow a number of beans which solves their protein requirement. They get paddy from the field and cowpea (*Vigna sinensis*), blackgram (*Phaseolus mungo*), Kandula (*Cajanus cajan*) from the *bagada* (forest areas).

Mixed Cropping :

It is a common feature in the tribal paddy field that one can find other crops like maize, blackgram, sorghum, ragi, kandula etc. in certain proportions. Due to erratic rainfed, most of the time the paddy crop fails. Therefore, one crop serves as the insurance for the other and they are sure to get a crop. In this mixed cropping, they include a legume which adds nitrogen to the soil

and provide the farmers with pulses. On the bunds of the land, they plant pulses such as arhar, blackgram, greengram etc.

Crop Production Practices :

a. Seed treatment

The tribal farmers are very careful about the seeds. They store the seeds with care and before sowing, they sometimes treat them with locally available materials. They dip the vegetable seeds in a aqueous solution of asafetida or hingu for about half an hour. They dry it in shade before sowing. They believe that this keeps the plants healthy.

b. Sowing of seeds

Broadcasting method is the common practice in the upland situation for paddy. They explain that this practice restricts the growth of weeds. They generally take a higher seed rate and follow one to two weeding. But, they say that in line sowing, the weeding is easier but need more than two weedings.

c. Use of manures

Farmers usually mix *Dhanicha* seeds with paddy and sow at a time together. At the time of *beusaning*, they incorporate this green manure in the soil. Use of cowdung and compost is the general practices. They also put wood ash in the soil for raising vegetables and fruit trees.

d. Weeding

They use a special type of implement, *Gadi* for weeding. Hand weeding is the general practice. They sometimes grow black coloured paddy to rouge out the volunteered seedlings of the last years variety grown in the same plot.

e. Mulching

Generally mulch is used by them in upland condition. They say that it helps in better germination of the seed material and restrict soil erosion and it provides certain amount of nutrients. They use sal mulch for raising turmeric. They say that no other species can compete with sal. The sal can withstand browsing to a great extent. In summer, when other trees shed their leaves, the sal put forths new big leaves. It is easy to carry sal stumps without any problem. If sal mulch is not available, they may reduce the land under turmeric. They say that in turmeric growing, sal mulch is given because it lasts longer.

f. Irrigation

They level the land properly so that water can flow without any hindrance from one plot to the other. Water is not allowed to spill over the plots. The main water channel is checked at different intervals. They divert the flow of water towards the field and from one field to other. They use earthen pipes or bamboo poles so that water can flow to the neighbouring fields without making any breach in the ridges. They may place a flat wooden plank or a flat stone piece on the ground where the water will drop with a speed. It helps in conserving the soil as it will flow only after facing a direct impact with the stone piece or wooden plank. This practice is followed where there is a perennial stream in the sloppy areas.

g. Crop Protection

When they plant fruit trees, they generally spray the whole plant with cowdung so that cattle will not eat the plant. They also spray the dilute solution of cowdung to the roadside plants so that from that side cattle will not enter the field. The tribals uses the dry fruits of *Lagenaria spp.* for storage of seeds. They dry the leaves of Begonia

(*Vitex negundo*), Neem (*Azadiracta indica*) leaves and mix it with pulses and keep the seeds in gunny bags or bags made out of the straw. This practice to some extent, saves the grains from attack of pulse beetles. It is recorded that this practice saves 45 - 85% of grains from the beetles. The turmeric and *bael* leaves are also used for this purpose.

They put a little amount of opium in the internode of cucurbits like pumpkin, ash gourd, bottle gourd. The number of fruit increases per plant (as Morphin increases fruiting). In papaya, if it does not bear fruiting, the farmers used to put a peg horizontally on the stem and the plant starts bearing fruits (It may due to change in C/N ratio that would initiate flowering). They have no answer to the practice which seem to have good effect. This certainly shows their wisdom and intelligence to develop practices those are suitable to their situation.

Post-harvest Technology :

They dry the tendu fruits, mango, jackfruit and consume it during the rainy season without addition of preservatives. They can keep these fruits and pulps for a long period. They consume the powdered mango kennel after removing the bitter principle by washing it with running water. They use many seeds for getting starch or protein. There are many examples – a few of which are given here.

Community Resources Management :

The farmers in tribal areas mostly depend on the forest all the year round; but they believe that the forest belongs to all. Before using the community resources such as forest, water, pasture; they always discuss among themselves. Before going for jhoom cultivation, the villagers (Elder persons) sit and plan out of the future programme. They go together to the forest, cut down the trees or small shrubs from the earmarked areas only.

The tribal farmers generally keep a particular area for getting the mulch for growing turmeric, as mulching for turmeric is a must. Everybody has equal right on this input. They do not indiscriminately cut the forest. They keep the area under the turmeric almost fixed. They unnecessarily disturb the eco-system. Even, they do not decide who would grow turmeric which year. There may be some exceptions, but they follow a certain rule in maintaining the eco-system.

They use their excellence in developing the terraces or developing plots in the uplands for growing paddy. In many areas, where the farmers have the cross bund by themselves and run the channel up to 2.5 km with such a precision that the flow is never interrupted. They do it very nicely using the bamboo poles as a levelling instruments.

In the streams, they dig shallow wells which retain the flow water for the summer season. They use this water for irrigating the field in the bank of the streams. In some areas, it is seen that a tank stream during the rainy season. On the bank of the water harvesting structures, they fix the families who would use the water in the first year and who would use in the next year.

These practices that exist today, are certainly developed by the intelligent minds to make themselves self sufficient. Necessity has made them to think how best they can harvest the nature. Only the traditional wisdom of the farmers has to be given due importance while developing technology for them. Then the appropriate technology for them are to be found out through the research and to be tried in their

setting for its efficacy. Through the testing, if it proves better and the farmers accepted it, then automatically that become sustainable. On the other hand, as they do not want to part with their environment and they take agriculture as their occupation, they will make agriculture a sustainable one through their traditional wisdom with the blend of modernization.

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Profile of Mine Workers in Orissa

Umesh Chandra Devata

Mining occupies a paramount place in the advancement of a nation. Precisely speaking, mining constitutes the basic feedstock for industrial growth in a mineral rich nation like India. The mining industry in the country ranks among five major industries in terms of manpower deployment and capital investment. Orissa, blessed with abundant natural resources, occupies first position in chromites and manganese ore production with the share of 87.93 and 36.39% respectively and ranks fourth in terms of Iron ore production in the country. No other part of India is so much enriched with minerals as the region of Keonjhar and Mayurbhanj district of Orissa. According to a recent data, the total number of mines in the state stands at 647 in 2009.

The Mines Act 1952 defines a mine as any excavation where any operation for the purpose of searching or obtaining minerals has been or being carried on. Excavation may be open cast or underground including all process. Further, it defines an owner meaning any person who is the immediate proprietor or occupier of mine or any part thereof. Here comes the role and recognition of labour as a human factor in exploration and exploitation of mineral resources.

Objective of the Study :

The present study perceiving rapid change in the employment pattern of miners in Orissa attempts to portray the existing socio-economic condition and status of the miners. It aims at making an in-depth enquiry in to reality of the problems faced by the miners and presenting their true picture in the contest of the changing developmental scenario of the State. Particularly it would study the structure of labor market, method of recruitment and degree of exploitation of miners under the contract system. It would also investigate into the adequacy of the measures for occupational safety and protective social security legislation.

Nature of workers and their wages :

Mining workers render greater service to the material benefit of the country and its people. The activities of mining and quarrying cover under ground and surface mines quarries and wells. These include extraction of minerals and all those supplemental activities such as dressing and beneficiation of ores, crossing, screening, washing, cleaning, grading, milling, floatation, melting, palletizing, topping and other preparation carried by the workers at the mine site which are needed to render the material marketable.

TABLE - 1 (working mines and workers employed.) 2003-2009

Year	No. of Working Mines	Area Covered	No. of workers employed
2003-04	365	71898	45549
2004-05	390	76359.82	50756
2005-06	415	141758	50156
2006-07	373	73079.24	47436
2007-08	469	102932.83	49196
2008-09	415	100644.25	44134

Sources – Directorate of Economics and Statistics Orissa.

Indepth analysis of Table 1 reveals that inspite of increase in the number of working mines over the years the number of workers employed has been decreasing continuously every year. The district of Keonjhar accounts for highest number of miners followed by Angul and Sundargarh. The Keonjhar district is abundantly endowed with mineral resources with greater predominance of tribal workers. These working mines do not include the stone quarrying units which number is around 200. The workers working in these units are not considered as mine workers therefore though there are 3 lakh mine workers in Orissa. Govt. of Orissa record shows that there is only 44134 mine workers. This is the main reason for which statistics given in table 1 shows a decline in the number of mines workers.

The mines in Orissa have two types of workers i.e. departmental workers and contract labourers. In public sector mines departmental workers are majority whereas in private sector mines the percentage of contract labourers is higher. Recruitment of semi-skilled and unskilled workers is done largely through informal social channel. Different mines have different agencies of recruitments. The Companies and mine-owners obtain their supply of labour through labour Sirdars or labour contractor. The Companies have their own salaried Sirdars and the cost of bringing labourers to the mines is borne by the company which is also the pay masters of thelabourers. The labour-contractors recruit sub-contractors for the supply of labourers and is responsible for management of labourers. The Companies recruit theirlabourers locally. If the companies are in need of labourers they ask their mates to inform workers and the news is spread in surrounding villages that work is available. Employers prefer male worker on grounds of supposed higher efficiency, economy of cost and other supplementary benefits. The percentage of women workers in mines under TISCO and SAIL lies within 20% only due to the mechanized nature of work. Contract system of recruitment of labourers is highly exploitative in nature. Since the power of appointment and dismissal lies with the contractors they exploit the workers in various ways as payment of low wages, non-maintenance of proper work roll register, manipulation of records, non-application of leave rules, insurance and compensation, longer hours of work beyond 8 hours without any extra payment. The contractors recruit a high proportion of unskilled workers from the rural and tribal areas. Since the contract labourers do not get the opportunity to organize under any union they are forced to work under unfavourable conditions. Due to their acute poverty; the contractors get an upper hand in bidding and adopt all sorts of illegal practices being indifferent to the labour-legislations such as Mines Act, Mine Wages Act, Workmen Compensation Act and various protective legal measures relating to Insurance and social security. It may be mentioned here that the unskilled, semi skilled, skilled and high skilled workers are supposed to be paid Rs. 120/-, Rs. 150/-, Rs. 180/- and Rs. 210/- respectively under Law.

In contrast to this, personal interaction with the mine workers in some of the mines reveals that their monthly income is between Rs. 2200/- to Rs. 2500/-, on computation, the daily wages comes to Rs.75 to 85. In an eagerness to make more money contractors prefer frequent dismissal and new recruitment which not only creates an unstable labour force but also insecurity of jobs for the workers.

The income of the working class hinges mainly on wages. Wage is associated with the relative status of the workers, his commitment to industry, his attitude towards management, his moral motivation and standard of living. Way back in 1949 the Committee on fair wages had developed concepts such as living wage, fair wage and minimum wage. Living wage enables a worker to provide for himself and his family not merely the bare essential of food, clothing and shelter but a measure of frugal comfort including education for the children, protection against ill health, requirements of essential social needs and a measure of insurance against the more important misfortunes including old age.

On the other hand, minimum wages must provide not merely the bare sustenance of life but also for the preservation of efficiency of the workers. It needs to be sufficient to maintain himself, his wife and children in normal health. It is otherwise called as 'subsistence wage'. In international parlance the 'living wage' is often equated with 'subsistence wage'. A 'fair wage' is one which is above the 'minimum wage' but below the 'living wage'.

Methods of Wage Payment :

Payment of wages to mine workers assume two well known forms-time-wage system and piece-rate system. Under the former the worker is paid according to the time for which he works usually 8 hours per day as per the labour laws. The wage rates are fixed for specific unit of time irrespective of the amount of work done by the employee for a particular task. On the other hand, under the piece-rate system the worker is paid in proportion to the output or performance. Both the methods of wage payments are prevalent in the mines of Orissa. In fact, the piece rate system is the predominant form of payment in the mines taking into account the nature of work. For example, payment according to weight that is tones of ores raised or wage-box system with boxes of specific square feet as the popular and wisely used method of payment of wages in mines. However fixation of piece-rate wage has been subject to the Minimum Wages Act 1948.

Different research works have revealed that wage structure for the miners is characterized by pathetically low level, wide sectoral and regional variation and imperfections in the labour market. Till 1967, there was no statutory minimum wages in iron ore mines. The casual workers otherwise known as daily rated or hazir workers are also there who got their wage monthly by the mines authority and their status is better than the labours work under contractors. In addition to mining work the casual labourers are also engaged in forest clearance, loading and unloading trucks, construction and maintenance of roads and supply of water etc. Workers working in underground mines get relatively higher wages than those working on surface.

Women are paid lower wages than men with regard to time-wage system in large number of private sector mines. However, there is hardly any discrimination between men and women with regard to piece-rate for the same kind of work. In case of unskilled workers equality is often ignored by restricting the female labourers to a particular type of unskilled work. Factors which have accounted for low wages of women workers are lower physical strength, low productivity, high

rate of absenteeism and labour turn over, greater immovability and weaker organizing and barging power. However it is worth mentioning that the productivity of women worker with larger proportion of them belonging to the tribal communities is no less than the male miners. They are as hard working as male workers working together in earth cutting, digging and raising operations.

The mine workers in India get bonus as gift over and above what is nominally due as remuneration to the employees. The labour legislations state that bonus is a matter of right under Payment of Bonus Act 1965 rather than grace for the workers. Workers are entitled to get minimum 8.33% to maximum 20% of profit as bonus in a year. However, bonus payment is not being made by different mine owners on the basis of productivity gains.

Social Security Measures

Social security is a comprehensive and dynamic concept. Social security is an attack on five giants i.e. want, disease, ignorance, squalor and idleness. Social security is an end by itself and there are two main currents of thought in the movement to achieve this end. (i) social insurance (ii) social assistance. It is a method to pool the insecurity of all members insured under it. Social insurance is one of the two approaches to social security, the other being social assistance. Social assistance is the oldest form of social security. The Government of India has framed many acts for the social security of the mine workers. The first legislative measure of social security in India was the Workmen Compensation Act, 1923 amended in 1926. The social security legislations at present in force in India comprise the following enactments.

1. The Workmen's Compensation Act, 1923
2. The Maternity Benefit Act, (1961)
3. The Employees Provident Fund Act, 1952.
4. The Coal Mines Provident Fund and Bonus Scheme Act, 1948.
5. The Industrial Disputes (Amendment) Act, 1947.
6. The Payment of Gratuity Act, 1972.

As per different labour legislations of the State, a mine worker's name and address should be registered in "B" register with his photograph and he should get a job card. As per service condition and rules, a worker should get 18 days sick leave, 10 days casual leave, 7 days festival leave, 5 days government leave, one day earned leave in every 20 days which comes to 56 days of leave with payment. On the other hand, the women worker should avail maternity leave with payment together with 56 days of usual leave. Besides this, there is legal provision for providing additional D.A. in every 6 months. They should enjoy proper quarter, hospital facilities, medicine, crèche, canteen, safe drinking water, entertainment centre, library, playground, schooling and supply of necessary goods in reasonable price. Further, the labourers if work for one year they should avail wages for 15 days at the time of their retrenchment and if they work for more than 5 years they should get gratuity for 15 days in every year. There is also provision that 10% of their wage should be deposited in EPF and the owner is liable to deposit 10% for him. There is also provision for compensation for the working labourers. No labourer should get below amount than the minimum wage fixed by the Government of India. The provision for providing two pairs of shoes, a cap and goggles to each labourer is there. Besides these, there is also provision available by the Orissa Mining

Corporation for the operation of employees' grievance cells.

Occupational Health :

Workers in mines continue to work in a state of various occupational diseases and health hazards. Workers in manganese mines have become the worst sufferer of these. Workers in Manganese and Ferromanganese plants are affected by inhalation and absorption of manganese dust and fumes that results in inflammation of lungs. After working a period of 10 years they are likely to suffer from Tuberculosis. The metallic poison of the manganese ores have made the patient physically handicapped and the limbs inoperative. Reports on monthly statistics of patients from the CESS Hospital of Joda reveals that out of 105 male patients 14 and out of 72 female patients 13 have suffered from the respiratory diseases such as pneumonia and pnemonitis in 1989. More than 500 manganese mine workers suffer from Tuberculosis per year. Most of them are tribal workers. The smoke coming out of the ferromanganese plant are creating environmental pollution because of the non-use of dust-catcher and the bag-filter. Workers in iron ore mines frequently suffer from dysentery, intestinal tremors, malaria and muscular fatigueness. A great majority of workers are affected by skin diseases both due to non-availability of safe drinking and bathing water and lack of nutritious food. Though impact of manganese poisoning has been recognized as an industrial disease in European countries, it is not yet recognized as an occupational disease in our country. Consequently, workers affected by this chronic disease are deprived of getting the benefit under the Workmen's Compensation Act. 1923. Though the Government of Orissa has raised the minimum amount of compensation to Rs.7,000 and maximum up to Rs.40,000 as per workmen's compensation act 1923, no manganese miner has been able to get it.

Except the mines under TISCO in the private sector and SAIL in the Public sector workers in other mines rarely use protective safety appliances like helmets, masks, boots, gloves, goggles and safety clothes. Only 30 to 40 per cent of the total mine workers in the district of Keonjhar use safety appliances. Though provision has been made in the Safety Act for the use of dust- protecting masks, it is not practically done in any of the mines.

Workmen's Compensation:

Among different problems of larger industrialization, industrial accidents draw everybody's attention. Industrial accidents present essentially the same problem as occupational diseases resulting in loss of life or non-fatal minor or severe injuries to the body or mind. Problem of safety is becoming more complex as mining is extending to greater depth and more and more machines are used.

As between the factories and mines, the percentage of accident is the highest in mines. The causes of accidents are unsafe designing, inadequate tools and machines, hazardous overload, unsafe illumination in underground mines, dampness, unsafe and narrow place of work, unhygienic environment, fault of materials, absence of defensive or protective clothing, danger of infection, lack of proper and effective supervision and above all faulty implementation of safety acts and rules. The human element in accidents is of greater importance in mines than in any other industries because of adverse physical conditions of works. Unsafe use of dumpers is the major factor accounting for about three –fourth of the accidents in the underground mines.

A survey report of the Ministry of Labour and Employment of the Government of India shows that of the mines giving employment to more than 7 lakhs in the country and in 95 percent of the mines the safety provisions and protective measures are far from satisfactory and the workers are working with a high degree of risk and uncertainty of life.

The rate and mode of compensation payable under the Act depend upon the nature of the injury and the average monthly wages of the workmen. Paradoxically enough, it was found that some of the mines with higher wages were paying lower amount of compensation. The compensation Act is not strictly followed in practice. "If accidents are due to the fault of the victims they will not be compensated" this clause of the Workmen's Compensation Act is certainly being used to deprive many workers of their rightful compensation. It is found from research that only a few big mine owners such as TISCO, SAIL, FACOR and some mines under OMC Ltd. are providing compensation benefits. The accidents are not always reported and compensation is paid often at a lower rate than prescribed.

Conclusion:

The above expositions are pointers to our understanding of miserable work-environment of the mine workers. If proper care is not taken to unearth the exploitation, the workers will continue to suffer in the hands of profit- seeking contractors and capitalists. The demands of Human Rights are giving us warning that needful must be ensured as quick as possible.

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The Coast Canal in Orissa During the Colonial Era

Dr. Ganeswar Nayak

In 1866 Orissa was visited by a most devastating famine in her colonial history. It was so terrible that one third of its population were perished .It is called *Na Anka* famine in Orissa because it came in the 9th Regnal year of king Divya Singha Deva, the Gajapati king of Orissa. The Secretary of State for India ordered for an inquiry into the appalling catastrophe and a Commission was appointed in Dec1866 by the Govt. of India under the chairmanship of George Campbell. The Commission submitted its report on 6th April 1867.

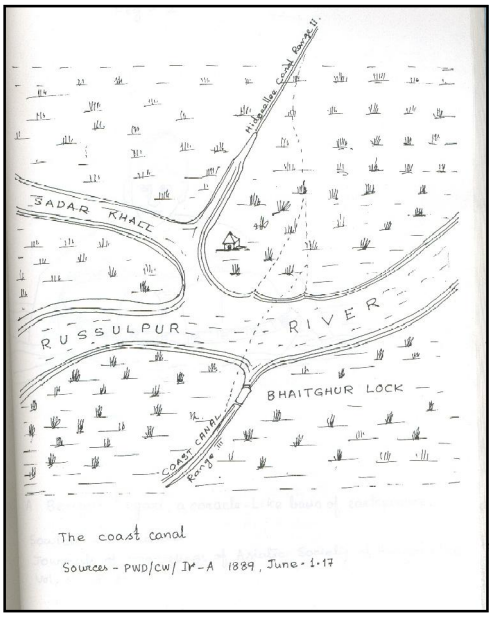
The Famine Commission of 1866 directed the attention to the state of communication of Orissa and measures were taken thereafter to prevent the recurrence of similar disaster by improving the communication. The Commission recommendations constituted important milestone in the economic history of Orissa. It realized how greater part of Orissa, as it were , out of world, how inaccessible it was to the ordinary trade, and with this fearful results that inaccessibility was attended during the famine. With these facts in view, the commission suggested for speedy execution of Trunk Road from Cuttack to Calcutta. Further the Commission recommended for making the irrigation canals navigable. So, several canals were developed in Orissa for communication purposes.

The works for the Orissa Coast Canal started in the year 1880-81. The amount of original estimate of the Orissa Coast Canal was Rs.36,02,297 inclusive of indirect charges sanctioned in India Govt. No. 155 dated 20th Aug. 1879. The estimate was revised in 1888 chiefly on account of excess in navigation works due to bad foundation and cost of extra land. The revised estimate was Rs.44,74,941.

The main causes, which attributed for the construction of the coast canal was that the province of Orissa was only in Bengal, which was completely isolated and cut off from all communications with Calcutta by rail or river. So trade was compelled to take the sea route. But the ports were so inferior that transport was effectuated with many difficulties and consequent expenses. The False Point harbour was rapidly deteriorating and steamers of British India Company were forced to lie outside while the only other port Dhamra was blocked by a bar, on which the depth at low water was only nine feet. The construction of costly bridges due to the presence of several rivers did not encourage the British Government to extent the railway construction to Orissa. Famine, poverty and high mortality in Orissa did not receive the consideration of the Government for extension of railway to Orissa.

Since the famine of 1865-66 in Orissa, actually nothing had been done to improve the means of communication with Orissa. But if the coast canal would be constructed and if another famine visited Orissa a vast number of boats from the rivers of lower Bengal would be concentrated for the carriage of grain without any additional expenses to the Government.

Further Orissa Coast Canal was constructed not as a productive public work but as a famine protective work. It was designed not to yield profit but to afford protection to Orissa from famine.



The Lt. Governor of Bengal was of the opinion that the High-level canal should eventually be connected with the coast canal by a link from the Matai to Bhadrak, and that the locks on this link should be of the full size. (150 feet by 20 feet) Direct thorough communication with Cuttack would then be established for a class of boats, which could traverse the branch canal to the coast, viz., the Taldanda, the Kedrapara, the Gobri; the locks on which was only 100 feet by 17 feet.

Its construction was undertaken because it was considered that it could be valuable as a protection against famine and remunerative as a trade route. It was anticipated that all the import and export trades of Orissa would pass through it and that it could yield revenue of over Rs.2½ lakhs.

The Coast Canal connected the river Hoogly at Geonkhali; 45 miles from Calcutta with river Matai at Charbatia near Bhadrak. It ran along the sea face at a distance varying between 2 to 10 miles. By this it was planned to open the navigation via Gobri Canal to Cuttack and by tidal creek to False Point Port. It was also further planned to connect Chilika Lake and Ganjam into direct communication with Calcutta and thus connect large towns and marts. (Calcutta, Balighai Hidgelee, Balasore, Chandbali, Cuttack, Puri and Ganjam). Its length in Orissa was 92 miles and was divided into four ranges. The canal was fed by tidal water so it was not useful for irrigation. The four ranges of coast canal were as follows.

Range-III

1. It connected the Badga river, a branch of Rasulpur River in Hidgelle with Subarnarekha River, in Balasore District thirty one and quarter miles in length.

Range- IVA

2. It connected Subarnarekha River with Panchapara River seventeen miles in length.

Range-IVB

3. It connected Panchapara River with Burabalanga River seven miles in length.

Range-V

4. It connected Burabalanga River with Matai River in Balasore District, thirty eight miles in length.

Each of these ranges was an open cut with level bed, provided with a lock at each end. During the dry season the canal was filled by tides and during the rains by surface drainage from the adjoining country. The canal was generally laid out parallel to the great line of sand-hills extending uninterruptedly along the whole coast from Contai in Hidgelee to Dhamra. Thus the canal was to a great extent protected the country from cyclone.

The northern terminus of the range III was placed on the south or right bank of the Badga River. It was located opposite to the village Surpai where a tidal creek connected Badga River with Contai, the headquarter of Hidgelee sub division of the Midnapur District. The southern terminus of Range III was on the left bank of Subarnarekha

River. But due to excessive flood of the Subarnarekha River, and the incapacity of its channel to carry off its maximum discharge, the southern terminus of the range III was placed Goocheeda River about one mile from its junction of the Subarnarekha River near Kalaburea.

The terminus of ranges No IVA and IVB and V were placed as to interfere as far as possible with flood sections of the rivers connected by them, viz. the Burabalanga and the Panchapara River. There was inconvenience to the boat navigation owing to the termini not being exactly opposite to each other. The Southern terminus of Range No V was placed on the left bank of the Matai River, a little below Charbatia village. The Matai River was one of the finest natural tidal canals in Orissa. The average width of the river at surface of low water was over 130 feet and its depth was 12 to 15 feet.

The bed level of the canal was determined with reference to the average spring tide of the cold season, when the rise of the tide was the least .The minimum depth of water in the canal was 7 feet. But it was to be remembered that this minimum depth was only for about 8 or 10 days at the outside in the 12 months i.e., during the spring tides of December, January, and February. The interval between two successive spring tides was taken to be the period between the days that the tide raised to the maximum height to the period to the days that its rise was the least. Or from the first or 14th day of the moon to the 10th or 24th day, according as spring tides due to new moon or full moon.

The bed level of the different ranges of the canals was fixed in accordance with the calculations given below.

Range	III -	101.50	
IVA	-	99.00	Plus datum
IVB	-	98.00	
V	-	101.00	

The datum line used in all the levels connected with these coast canals was the mean sea level at Karachi, as used almost all over Bengal and upper India. The mean tidal level on the coast here, whereas it was actually three to four feet below it.

The canal originally had a minimum bottom width of 40 feet. But to raise the side banks in several places above the flood level and also increase the width near the terminal locks, the mean bottom width of the several ranges was considerable more. The following table indicates the bottom width of different Ranges of the coast canal.

Table-1

Different Ranges of Coast Canal.

Name of the Range	Bottom width	
	Minimum width	Mean width
Range No. – III	40	50.00
Range No. - IVA	46	56.08
Range No. –IVB	36	40.00
Range No. –V	40	43.00

The average depth during the cold season is eight feet and during remainder of the year ten feet. The minimum depth in No III and V was experienced once or twice during 12 month and it was continuing a day or two in the tide. The average minimum mean width of the canal at the water surface at the cold season was 64 and 74 feet. The average minimum mean width during rest of the year 70 or 80 feet, according as the base of the canal was fixed at 40 to 50 feet. In the Statement marked were shown the depth of water in different ranges during the cold season.

Table -2

Depth of water in different ranges during the cold season

Name of Range	Base 40 feet						Base 50 feet					
	Spring Average Tide			Spring Lowest Tide			Spring Average Tide			Spring Lowest Tide		
	Max.	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min
Range-III	8.5	7.725	6.95	7.50	6.95	6.43	8.30	7.78	7.06	7.50	7.00	6.50
Range-IVA	10.00	9.015	8.03	9.00	8.33	7.70	10.00	9.015	8.43	9.00	8.55	7.75
Range-IVB	11.00	9.50	8.00	10.00	9.00	8.00	11.00	9.30	8.10	10.00	9.00	8.00
Range-V	8.00	7.43	6.86	7.00	6.035	6.27	8.00	7.49	6.98	7.00	6.67	6.54

Range III in prolongation of Range-I and II of the Hijli canal was opened in July 1885 and the first return from the revenue shown in 1885-86. Ranges IVA and V were temporarily opened for traffic from 15th July to 31st December 1886. The entire length of 92 miles was opened in 1st Sept 1887.

But with the opening of railway in 1896 the canal became a dead loss to the Government. It failed to fulfill the expectations. The canal was being fed by tidal water, so it was not useful for irrigation. So it did not benefit the agriculture. It was a common complaint of landlord and Raiyat, that its effects had been deleterious. It was difficult for one who was not a Civil Engineer to arrive at any conclusion upon this point. One of the popular view was that the embankment of the coast canal prevented free egress of the Subarnarekha flood and thus raised its depth on the western side from Pragana Kamardachour as far south as Sartha and also similar effects produced in Pragana Ankur. On the other hand, it was supposed that canal bank would afford protection against cyclonic irruptions of the sea. But on the other hand, the water passed over the embankment and approached to within two miles of Balasore town.

So the coast canal did undeniable damage to the people. In Orissa, where the capacity of the river is often fraction of total volume of water to be disposed off, the excess water must necessarily pass to the sea over the surface of the land. In that circumstances, it was unwise to deliberately interpose a barrier of 60 miles long (between the water and the sea). The result was that the formation of a reservoir of huge dimensions. So the proposal for numerous and large cross drainage planned but abandoned due to heavy expenditure. So the flood advisory committee of 1928 recommended the abandonment of canal. So the ranges of IVA, IVB of the canal were abandoned.

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Twenty-Five Years of Bhoodan Movement in Orissa (1951-76) - A Review

Sarat Parida

The *Bhoodan* Movement, initiated by *Acharya* Vinoba Bhave, a trusted follower of *Mahatma* Gandhi, was lunched in the country in the early fifties of the last century. The movement was an attempt at land reform and it intended to solve the land problem in the country in a novel way by making land available to the most sub-merged and disadvantaged class of Indian society, the landless and the land poor and the equitable distribution of land by voluntary donations. The movement deriving its inspiration from Gandhian philosophy and techniques, created a sensation in Indian society for a few years by making mass appeal and giving rise to the hope of solving the age old land problem by producing miraculous results in the initial years of its launch. It was an intellectual movement based on the theory of trusteeship and it emphasized on the need of class co-operation in agrarian society.

The movement owed its origin during Vinoba's tour of the strife-torn region of Telengana in Hyderabad in April, 1951. He undertook the tour to spread the message of peace in the region as it witnessed violent clashes between the Communists and the landlords in the wake of an agrarian movement. On 18 April, 1951, a small but extraordinary incident occurred in his camp at Pochampalli village. On that day, Vinoba was offered 100 acres of land by Ram Chandra Reddy after he appealed to the assembled villagers in his prayer meeting to do something for the *harijans* of the village. This incident came as a revelation to Vinoba and he became convinced that if one man on listening to his appeal could offer gifts of land, surely others could be induced in the same way. But it was only after receiving the second gift on 19 April, 1952 in the village Tanglapalli from Vyankat Reddy, he described the previous day's gift as *'bhoodan'* and realized that *'bhoodan'* could provide a solution to the problem of extreme inequality in the country. Thus, Vinoba and his followers undertook *pad-yatra* from village to village and persuaded the landowners to donate at least one-sixth of their land as '*bhoodan*' for distribution among the landless and the land poor. The encouraging response to Vinoba's land-gift mission in Telengana, in which he secured 12,000 acres land in '*bhoodan'* in 51 days emboldened Vinoba to continue the mission and finally prompted him to resolve on Gandhi's birthday in 1951 to collect fifty million acres of land for the landless from the whole country by 1957. This induced the *Sarvodaya* workers in various states to devote their energy on acquiring the target. Thus, an individual effort assumed the character of a movement and the '*bhoodan*' work, which was initially viewed by some as a mere charity work,

took the shape of a national reconstruction movement.

'Bhoodan' programme was started in Orissa on 7 January, 1952. On that day, Gopabandhu Choudhury and his wife Rama Devi along with several others started their historic *pad-yatra* from Bari-Ramachandrapur for collecting land for the landless. The *pad-yatra* though initially not intended for the purpose of '*bhoodan*', in the course of its progress collected land gifts. In the first meeting held at Bari-Ramachandrapur the first land-gift was made by Harapriya Devi of the village. The *pad-yatra* continued for 4 months and 22 days and it passed through 8 districts of Orissa covering a distance of 1100 miles, yielded a collection of 1626 acres of land from 233 donors. The second round of *pad-yatra* led by Gopabandhu Choudhury and Rama Devi commenced on the Gandhi Jayanti day in 1952 and it ended on 10 December, 1952. This *pad-yatra*, which covered only a distance of 427 miles yielded a collection of 463 acres of land, seven pair of bullocks and agricultural implements worth rupees 816. Though the movement started as a private movement, it received the support of the State Government. To facilitate the donation of land to the movement and to provide for the distribution of such lands, the Orissa Legislative Assembly passed the Orissa Bhoodan Yagna Bill, 1953 on 9 April, 1953. It received the assent of the President of India on 26 July, 1953 and became Orissa Act XVI of 1953. The Act provided for the establishment of a Bhoodan Yagna Samiti in the State of Orissa. The Samiti was authorized by the Act to receive donations or grants of land and to distribute the lands vested in it to landless persons.

To give a fillip to the movement in Orissa, Vinoba campaigned in the State. Actually Vinoba's '*bhoodan'* campaign was started in Orissa on 26 January, 1955, when he set foot at Deola, a frontier village in Balasore district. In the first meeting held at Lakshmananath in Balasore district, Vinoba was apprised of the progress of the movement in Orissa. It was reported in that meeting that the total *'bhoodan'* collections in Orissa was one lakh and twenty-two thousand acres. But that was much less than the targeted 5 lakh acres of land set for '*bhoodan'* collections in Orissa by Vinoba by the end of 1957. However, by the time he started his *pad-yatra* in Orissa a definite shift was perceived in the movement as it took a new form that of *Gramdan* or donation of village, which soon overshadowed the '*bhoodan'* programme. Though the programme of land gift was still there, it became almost a neglected activity in the subsequent years and little land was received as donations.

Gramdan an offshoot of *Bhooda*n programe was actually started in the year1952, when on 24 May, 1952 the entire population of the village Mangroth in Uttar Pradesh donated their land in *bhoodan.* But it was only during and after Vinoba's foot-march through Orissa that the movement assumed mass proportion and became a forceful campaign. Though the first *Gramdan* in Orissa was obtained in Manpur in Cuttack district on 30 January, 1953, in the district of Koraput the movement received great stimulus. By the time Vinoba left Orissa on 1 October, 1955 Koraput contributed 606 *Gramdan* villages alone out of the total 812 made in the entire province. The movement got impetus in 1956, when Nabakrushna Choudhury resigning from Chief Ministership joined the movement. As a result, by the end of 1960, 1946 villages were gifted in *Gramdan* in the State out of the total 4500 *Gramdans* made in the entire country. The movement received a fresh lease of life during Vinoba's second *pad-yatra* in the state, which

started on 13 August, 1963 and continued till 12 December, 1963. This *pad-yatra* which passed through 8 districts of western Orissa gave popularity to the movement in the region, where the movement yielded no spectacular results till that time. Even in the years following Vinoba's second visit to the State the movement made considerable progress in Orissa. This is evident from the fact that out of the total 11, 065 *Gramdans* made in the entire country by November,1965, Orissa made a handsome contribution of 2807 *Gramdans* and thus occupied the second place in the country in that respect. To facilitate donations of land to the Bhoodan and Gramdan Movement in the State and to provide for the distribution of such lands, the Government of Orissa passed the Orissa Bhoodan and Gramdan Act in 1970. But despite legislative measures the movement lost its momentum after the Fourth Five Year Plan (1969-74) period when the ceiling surplus provisions came in to force. On 18 April, 1976 the *Bhoodan* Movement completed 25 years of its launch in the country and though by March 1976, the Silver Jubilee Year of the movement, 10,611 villages were gifted in *Gramdan* in Orissa, yet the movement had failed to actualize the dream of Vinoba, who hoped to see the whole of India reconstituted in to Gramdan villages by the birth centenary of Mahatma Gandhi.

Thus, the *Bhoodan-Gramdan* Movement as a whole had failed to garner enough land for the landless in the State by the Silver Jubilee Year of the movement. All it could obtain in Orissa by the end of December 1975, was a total of 12, 75,428 acres out of which only 6, 79, 565 acres of land was distributed among 74, 687 families in the State. Nevertheless, Orissa occupied the fourth place in the country so far as the progress of *the Bhoodan-Gramdan* Movement in individual state was concerned by the Silver Jubilee Year of the movement. Ironically most of the villages gifted in the movement were located in the so-called tribal areas of the State, the areas which were in least need of land reforms. Also, a substantial part of the land donated in the movement was found either unsuitable for cultivation or under disputed possession. However, the movement should not be judged in terms of its material achievement but from the fact that it represented one of the major attempts after independence to provide a peaceful solution of the basic problem of Indian Society, the land problem, through voluntary action involving the masses.

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Genetically Modified (GM) Crops and Controversies

Dr. Baburam Singh

Ever since the introduction of first transgenic tomato for commercial cultivation in USA in the Year 1995, the area under GM crops has gone up 74-fold in the world. In 1996 the global area under transgenic was only 1.7 million hectares while in 2008 the global area is 125 million hectares. It took about 10 years for the area to cross the first billion mark while to cross the second billion acre mark it took only 3 years signifying the rapid expansion of the GM crops through out the world.

In 1996, the cultivation of biotech crop was confined to USA but now 25 countries have adapted its cultivation. In addition, 30 countries have granted regulatory approval for import of GM product and their release in open environment. Of the countries where GM crops are cultivated at present, 15 are from developing countries and remaining 10 are from developed countries. The number of biotech farmers increased significantly during these 13 years and at present it stands at 13.3 million. Notably 90 % (12.3 million) of them are resource poor farmers from developing countries.

Starting with one crop species in 1995, now the numbers of species in which transgenic have been developed has gone up to 24. Out of 66 principal crops cultivated through out the world, scientists are actively engaged in transgenic development in 57 crop species. It is excepted that by 2020-25 world will have transgenic in most important crop species.

The above development indicates the rate at which the technology is spreading and perhaps it may be the fastest spreading technology in the agriculture sector.

The leading countries where transgenic crops are extensively grown include USA with 62.5 million hectare, followed by Argentina (21.0 million hectares), Brazil (15.8 million hectares). India (7.6 million hectares), Canada (6.7 million hectares), China (3.8 million hectares, Paraguay (2.7 million hectares), South Africa (1.8 million hectares), Uruguay (0.7 million hectares), Bolivia (0.6 million hectares), Philippines (0.4 million hectares), Australia (0.2 million hectares), Mexico and other 12 countries with less than 0.1 million hectares. India finds a place in the top 5 mega-biotech countries of the world.

Scenario of GM crops in India :

In India the first transgenic (Bt Cotton) was cleared for cultivation in the year 2002. Within a span of seven years the area under Bt cotton has gone beyond 7.6 million hectares and it constitutes approximately 82% of the total cotton area of the country. Important States where Bt cotton is grown extensively include Maharastra (3.13 million hectares- representing almost half

of 42% of Bt cotton area in India) followed by Gujarat (1.36 million hectares), Andhra Pradesh (1.32 million hectares), Madhya Pradesh (620.000 ha). It is claimed that with the introduction of Bt cotton in India and with rapid expansion of its area, India got transformed from a net importer to a net exporter of cotton. Export of cotton registered a sharp increase from a meagre 0.05 million bales in 2001-02 to 8.5 million bales in 2006-08.

Field trial on 10 crops (brinjal, cabbage, castor, cauliflower, corn, ground-nut, okra, potato, rice and tomato) is going on at present in India. After Supreme Court lifted its restriction on experimental field trial of GM crops in 2008, the Apex Regulatory Body - Genetic Engineering Approval Committee (GEAC) has recommended for the field trial of Bt brinjal in the country. If it is allowed by government for its commercial cultivation it will be the first GM food crop to be cultivated in open environment in India. Several other GM food crops (cabbage, cauliflower, corn, ground-nut, okra, potato, rice and tomato) are in the pipe line to follow.

The GM Debate:

Lot of debates are going on relating to the prospect and risks associated with the GM crops.

The argument which are adduced in favour of GM technology are (i) higher yield (ii) better quality (iii) high degree of uniformity (iv) eco-friendly (vii) cost-effective and (viii) affordable price.

The arguments which are adduced against this technology are (i) cost-intensive (ii) hazardous to environment and health and (iii) detrimental to our livelihood security and sovereign rights of our farmers.

Contradicting claims and counter claims about the technology has kept all including farmers in a state of utter confusion.

Impact on Agriculture:

Promoters of GM technology claim that spread of GM crops will boost our agricultural production significantly through their high yielding ability and resistance against biotic and abiotic stresses. It will also ensure our food and nutritional security through development of nutritionally rich food grains like beta-carotene rich golden rice. It will reduce pressure on land and other natural resources due to high productivity of crops and thus can play a significant role in checking deforestation for agricultural purpose.

Where as the opponents of the technology claim that there is no significant gain in the productivity of the GM crops in comparison to some of the best high yielding varieties/ hybrids available in the country. They argue that cultivation of few GM varieties with narrow genetic base in large scale will make crops more vulnerable to diseases and pests due to genetic uniformity. Large scale cultivation of transgenic will also bring reduction in biodiversity though squeeze in varietal and crop diversity. There is risk of transfer of introduced foreign gene into other varieties and non-target species and it may lead to gene pollution and contamination of our genetic resources. Cultivation of transgenic will encourage more application of fertilizers and chemicals and cultivation of herbicide tolerant GM varieties will boost herbicide application in the field. Increase in application of these agrochemicals will ultimately lead to environmental pollution. Apprehensions are also made that cultivation of disease and pest resistant transgenic will lead to development of resistance in the pests and may hasten their co-evolution. Similarly transfer of herbicide tolerant/ resistant gene from transgenic to associate weed species may lead to development of super-weeds causing serious problem in future for their control.

Impact on Biodiversity:

The promoters of GM technology argue that introduction of GM crops will help in conservation of biodiversity through reduction in application of pesticides. They are also of opinion that extensive cultivation of GM crops will reduce pressure on the land and other natural resources and it will reduce deforestation activity for agriculture purpose. Whereas the opponents are of the view that introduction of transgenic particularly herbicide tolerant ones will encourage increased application of herbicides in the agricultural field. This will have adverse effect on the environment as well as biodiversity. In addition squeeze in varietal diversity and gene pollution will also adversely affect our rich biodiversity. Since biodiversity is the key to our food security any reduction in it will adversely affect our food security.

Impact on Health:

The promoters of GM technology argue that introduction of GM varieties capable of producing more nutrients and vitamins like golden rice will help to mitigate mal- nutrition problem in the under nourished people. Technologies are now also available to produce GM varieties that can produce therapeutical proteins and drugs in the plant systems and it may help in solving our health related problem. Whereas the opponents are of the view that the introduction of foreign gene in the food crop system will lead to production of a foreign protein that may cause Allergy, Cancer, Stomach ailment and various other ailments. They also cite some case studies in their support.

Impact on Economics:

Promoters of GM technology claim higher return due to reduction in the cost of production which can make food grains affordable to poor people. Because of its high degree of uniformity it can facilitate mechanization in agriculture and better market.

The counter claims are that it will be cost intensive and our resource poor farmer can not afford it. Besides the market access of GM foods it will have less appreciation in the market. Seeds of GM crops / technology have been patented and so it will be monopoly of multinationals who will indirectly control the price of seed and their availability and so it will affect sovereign rights of our farmers.

State approach to the problem:

Orissa is considered as the secondary centre of origin of rice due to occurrence of wide natural variability (genetic diversity). Similarly Orissa is considered as the gene center for several other crops like brinjal, gourds, cucumber, minor millet etc. The State should take a cautious approach as regards to GM crops are concerned to avoid any potential risk gene contamination and reduction in its rich biodiversity.

Through studies need to be made on aspects to aspects to assess its long term impact on environment, health and biodiversity prior to taking a policy decision on introduction of relevant GM crops.

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Kandha Culture of Kalahandi in Orissa

Raghunath Rath

Kalahandi, the picturesque landmark of Orissa became a district after merger of princely states. It lies between 19°.3' N and 21°.5'N latitude and 82°.20' E and 83°.47'E longitude. It is bounded by Kandhamal and Rayagada district on the East and Nawarangpur districts of Orissa and Chhatisgarh province on the west. On the north of this district situated Nuapada and Balangir districts and on the south bounded by Nawarangpur district. The geographical area of the district is 8197 square kilometer with a population of 13,35,494 as per 2001 census.

Kalahandi district is predominated by tribals. Tribals like Banjara, Bhatra, Bhunjia, Binjhal, Dal, Gond, Kandha, Mirdha, Munda, Paraja, Saora and Savar etc. are inhabited in the district. According to population Gonds is in the first place and Kandhas come to the next in the district. Kandha population in Kalahandi is 1,46,225 as per 1991 census.

The main sub-tribes Kutia Kandha, Dongaria Kandha and Desia Kandhas are inhabiting in Kalahandi district. Mainly Kandhas are concentrated in Bhawanipatna, Junagarh, Koksara, Kalampur, Jayapatna, Thuamul-Rampur, Lanjigarh and Madanpur-Rampur Blocks. Kandhas claim as the first settlers in the district. They were the owners of all the lands of the district in the past. So the land was named as Kandhan or Kandhan Des.

Among the Kandhas of Kalahandi many sub-groups are found. According to Dr. Krishan Sharma Dangaria, Kuvi, Kuttia, Languli, Penga and Jharania sub-groups of Kandha are found in the district (Sharma : 1979:17). Other scholars opined regarding their division as per following -

1. Desia or Kachharia Kandha, Kutia / Kotia Kandha / Dangria Kandha.

2. Dongaria, Kuvi, Kutia, Languli, Penga and Jharania.

3. Dangria, Jangalia, Nanglya, Pataria, Des Kandha, Jharia and Maria.

4. Kutia, Dangaria, Jharania, Desia, Desa Kandha, Dal Kandha and Maral.

x x x x

Dal Kandha, Kandha Paraja, Maral, Sulia Kandha etc. sub-groups of Kandhas are also found in this area (Mishra: 1992:71).

Anthropologists placed Kandhas in proto-astroloid race. But Dr. Krishna Sharma as per his research in Kalahandi district opined that 'the Konds tie into the proto-Astroloid racial type

of Guha with considerable Mongoloid admixture (Sharma 1979:103).

Kandhas are divided into numerous clans. Mainly seven divisions (Barga) are found among them. They are — Tupa, Luha, Budka, Gaanka, Sika, Badbudka and Uchharia. More than hundred divisions are curved from above seven divisions (Mishra 1992:73). According to Dr. Dol Govinda Bisi, a noted scholar, Kandhas are divided into — Charmilikya, Kudurkya, Balaringya, Turkya, Baramilkya, Kurmilkya, Sika, Beska, Dehelia, Chimabiria, Mutkya, Satmilikya, Sarmunya, Kurkya, Dal, Kamangya, Bachha, Uchrya, Ghusurya, Desghriya, Chimkya, Tupa, Bubrya, Dhumnia, Sangu, Lua, Kungibadka, Kanbiria etc (Bisi 1990:65)

Territories are marked and named after main Bargas known as Chaks, such as — Kandhas of Kesinga and Saintala are known as Sika Barg or Sika Chaka, Thuamula Rampur area is known as Tuduka and Sermelka Chaka and Jayapatna is marked as Miliki Chaka and Bijulka chaka and so on (Mishra 1992:72).

Kui is the mother tongue of Kandhas. This language comes under central Dravidian language group. Still this language is used in oral form. As much as four scripts are now invented by Sri Dayanidhi Mallik, Sri Dinabandhu Kanhar and Biswanath Pradhan of Kandhamal district and late Dasuram Maleka of R.Udayagiri area of Gajapati district. But non of those scripts are applied in Kandha society for the purpose of writing of the oral language. Missionaries in the past created some primers and religious literatures in Kui using Roman and Oriya script. In the present day also some Kui literature in Oriya script has been published by missionaries, Academy of Tribal Language and Culture, Bhubaneswar and some Kandha writers. Most of the Kandhas are bilinguals. They are well versed in Kui and Odia language. In some area Kandhas have forgotton their Kui language and are talking in Odia. The language spoken in Kalahandi district has resemblance with the language spoken by Doms.

Kandhas generally live in nucleus families. After marriage the son has to build a new house and separates himself from his parents. Only the youngest son has the right to live in the parental house. This tradition is prevalent in Kandha society even today. Old parents are respected in Kandha society. Kandha families are patriarcha. Father holds the higher rank in the family and then comes the place of the mother.

All the works are executed by both male and female. According to division of labour male is to do cultivation, clearing of forest and prepare lands, ploughing the field, building or repairing and thatching of house, keeping of monetary accounts, see the well being of the family etc. and females are responsible for all indoor household works like cooking, fetching of water, firewood, serving of food in the family, cleaning of utensils, cloths, cleaning of courtyard and cow shed, plastering of houses, mud plastering on the walls of new houses, planting of seedling in the field, harvesting of ripened crops etc. Females also take care of the children and old parents. Hence when at the time of choosing a bride for a Kandha groom parents choose a beautiful and hard working bride.

There were Dhangara Basa (youth dormitory) and Dhangiri Basa (Girls dormitory) in each Kandha village. Unmarried youths sleep in Dhangara Basa and unmarried girls sleep in Dhangiri Basa. Youths from other villages visit Dhangiri Basa at night and present small gifts to the girls and girls also entertain the youths with

country cigar, food and drinks. Then the girls dance with the youths singing songs and the youths also sing songs accompanying with musical instruments. Girls never dance with the youths of her own village, as they are brothers or uncles in relation. Now-a-days this tradition has been stopped except in some remote area due to influence of modern civilization.

Kandh youth select bride for him from this Dhangiri dance and the parents of the boy know the fact through the friends. After informed, the father of the boy send the Disari. In some places, Doms are also sent to negotiate with the father of the proposed bride. If the bride's father agrees with the proposal, the father of the groom proceeds to the bride's house with some relatives after some days and put forth the marriage proposal of his son before the parents of the bride.

Before proceeding to bride's house to put forth marriage proposal a test is to be conducted in the house of the groom in order to ascertain whether the bride will be auspicious or inauspicious to their home. For the test a handful of rice is to be cooked in a new earthen pot keeping on a burning hearth. If cooked rice will be overflowed and fall on the ground, the bride is felt an inauspicious and the proposal is stopped. (Nepak : 1977 : 223 and Dash : 1983:13)

Reaching the house of bride, the father of the groom put forths the marriage proposal before bride's father. If he agrees to it, then both the parties discuss about bride price. Generally bride price is paid in shape of money, ornaments and buffaloes. Generally cash of Rs.100 to Rs.1000 and buffaloes from one pair to ten pairs are given as bride price. The person who is unable to pay it is asked to work under his father-in-law's house until the required quantity is realized. After this marriage date is fixed (Senapati : 1980 : 97)

Kandhas believe the months of Margasir, Pausa, Magha and Baisakh are the auspicious months for marriage. Hence after payment of bride price a day is fixed from the auspicious months to solemnize marriage.

On the appointed day the groom and his party proceed to the bride's house beating musical instruments to bring the bride to his home, as marriage is solemnized at the house of the groom. The father of the bride treats the party with feast and liquor. Then they return to their village with the bride. Friends of the bride and relatives with villagers also follow them. On the way a mock fight is held between both the parties as the brides party pretends to take back the bride. But on the fight bride party fail to oppose groom's party and then both the parties proceed to groom's village with joy beating musical instruments.

At the time of departure the bride goes to her father, mother and all near and dear relatives and all houses of the village and weeps holding them. At this time the father binds some flowers, fruits or corns at one end of the Saree worn by the bride as a tradition of his sept. This is known as 'Kani china'. If this process is not done the father of the bride is penalized by his society (Bisi : 1990:76)

Marriage is solemnized by the Priest (Jani) at groom's house. The father of the bridegroom treats the bride's party with feast and liquor. Then bride's party returns to their village. But two or three close friends of the bride remain in the house of the groom for two or three days until the bride is settled.

Besides negotiated marriage, marriage by dragging by force, father-in- laws successor bride, elopement, entry into the house of lover by force and widow marriage are also prevalent in Kandha tribals.

When a Kandha lady conceives, she is bound to obey some taboos like — she will not cross channel of flowing water, she should not go anywhere in dark night, she should not go to worship place of the village etc. There is also some restrictions in taking of foods. She has to do all the household works till the time of delivery.

When the lady feels labour pain she has to go to a room of backside of the house and delivery takes place there. An experienced female of the village is to help during delivery, who is called 'sutaren'. The naval cord is being cut by an arrow, pottery shred or knife (knandri) (Mishra : 1992:77). An aged male member of the family beats the front roof of the house by an axe (tangi) or a yoke in case of male child and where female child is born he beats by hand pounding rod. The villagers come to know the gender of the new born by this symbol of beating.

The father or the offspring mother is to bury the naval cord and placenta on the back side of the house just beneath the roof. Another hole is also dug near the buried place, where the new born will bathe for next twenty one days. After delivery some restrictions in food also imposed upon the offspring mother.

The family of the new born remains secluded from others of the village for five or seven days. On the appointed day an aged member of the family or the father of the new born worships the house deity by sacrificing a fowl and libation of liquor for ancestors and gods. Then the members of that family become purified and can mix with others of the village.

The offspring mother is to remain secluded in the labour room for one month. Nobody touch her during this period. The offspring mother do all her daily works through the backside of the house. She is not permitted to go to the front street. In case she goes to the front road of the house by mistake Dharanimata, the earth goddess will be angry and cause different kind of dangerous situation to the village. Hence a heavy expensive ritual is held to appease the earth goddess.

Name giving ceremony is solemnized after one month. On that day hairs from the head of the new born child is clean shaved and bathed after smearing of oil and turmeric paste. Then an elder person of the family holding the child with a new towel brings the child to outside the house for the first time. The priest (Jani) gives the name of the child on this day. The priest adopt some traditional methods to ascertain the name of the child. Generally the baby is named after any ancestor. The head of the family treats the relatives and all the villagers with a feast of goat meat curry, rice and liquor.

When death occurs Kandhas take the corpse to the burial ground and burn it. They don't burn the corpse of child, pregnant women and small pox patients. This type of dead bodies are buried by Kandhas. After disposal of dead bodies all the followers of the corpse go to the nearby river or flowing stream. The Jani mixes the blood of a chick with some oil and dip a feather of the chick in that oil and smear it on both the palms of every body after bath. Then all of them return to the village.

There is no cooking in the house of the dead for next three days and food is supplied by neighbours. All works for three days are suspended and all men and women of the village do not do any work outside the village.

On the third day females of the house of the dead plaster all the rooms with cow dung, cleans all the clothes and bath after cleaning the

heads with earth. Males also bath after cleaning head with earth. After bath all wear clean clothes. All old earthen pots are removed and thrown and new pots are used for cooking. Water mixed with mango bark juice is sprinkled in all rooms and over all members. The household deity is worshipped with scarifying a cock.

A ritual known Dosa is solemnized after one month or one year after death. All relatives with near and dear are being invited for the occasion. The head of the family arrange a grand feast consisting of meat and liquor.

In Kandha religious faith Dharani (earth goddess) is the chief and revered goddess. Besides Dharani Kandhas also worship Gram Devata (village deity), Ista devata (household deity), Bhima Devata (Rain god) etc. It is also known that deities like- Khandual, Sat Bhaen, Kandul boja, Jina and Duma also worshipped by Kandhas of Kalahandi (Panda 1989:50). Duma is the sprit of ancestors and they believe that after death the spirit of the dead lives with them in the family. They also worship all the elements of the nature, such as hill, forest, water etc.

Kandhas of Kalahandi observes Pusparab, Chaita Parab, Nua Khai, Dasahara, Mandia Rani Parab etc. Besides this they also observe Balijatra, Bhimabhia and Taki Parab. Taki or Toki Parab is not observed annually. In the past in this festival living human were sacrificed and now a sheep is sacrificed instead of human being. In Asadha Kandhas observe Laxmi or Taku Parab, Nangal Dhua Parab also onserved on the full moon day of Sraban, Naguni Parab or Bhado Parab in Bhadrab, Chait Parab and Toki Parab also observed by Kandhas (Mishra 1998:45).

Toki Parab is observed for seven days. It starts five days before full moon day of Pausa and ends after two days of full moon day. Each day of the rituals named separately, they are as follows:-

1st day- Aka Tola (Plucking of leaf)

2nd day-Upasi (Fasting)

3rd day-Darunda (Gathering)

4th day-Taki (Sacrificing the sheep)

5th day-Karakunda (Sacrifice of buffalo or goat)

6th day- Brlupata (day of merry making)

(Panda : 1993:72)

The sixth day is known as Dhangiri Dola and seventh day is called as Gurupuja in some areas. Activities of each day are discussed below.

On the first day the women folk go into the forest and bring Siali leaf. They make plates from these leafs for ritual use. All the outdoor works are stopped from this day. This day is known as Aka Tola or plucking of leaf. The second day is called Upasi as all the villagers observe fasting till the completion of the festival. Everyone drinks and dances on this day. The sacrificing Tangi or sacred axe and knife brought to the Gudighar being worshipped in the house of the Jani. The third day is Darunda means gathering. Villagers of the Desa or Chak come with their sacred axe to celebrate Taki Parab in the village where the ritual is performed. On this day the village deity is worshipped and four peacock toys made of iron are buried near Dharani pole near the Gudi Ghar and Dharani Pada. Other villagers come with drums to the village for performing Taki Parab and join others. They are all drunker and dance throughout the night.

On the fourth day, the Jani and Disari after worshipping different gods and goddesses through

elaborate rituals proceeds to jenakhal or Debi Gudi with the villagers in procession beating drums and Mahuri. They also take the sheep, the Taki with them to Jena Khal. There the Taki is placed on a huge wooden pounding place and pounded by a huge wooden pounding pole. Then the entrails and liver are brought out and kept separately. The liver is kept in a small earthen pot which is known as Mutpen. Some rice, husks and water are also poured into the mutpen pot. On the same day at night a piglet is sacrificed at Sadar Gudi and the Mutpen pot is brought to Sadar Gudi and kept there.

The next day is the full moon day of Pausa. This day is the important day of Toki festival. In this day, an unmarried girl carrying the mutpen pot on her head proceeds to Jenakhal in procession with all the Des and Chaka members present beating drums and Mahuri. The Jani brings out a piece of iron called ling, which is a symbol of Dharani or Earth goddess and worship it. Then the Mutpen pot is buried there after offering to the Goddess.

The sixth day is called as Dhangiridola. Merry-making is the main object of this day. Dhangaras and Dhangiris sing and dance Dhap dance beating the musical instrument dhap. Dhangara by force takes his beloved Dhangiri by dragging with the help of his friends and his villagers. People of other villages return to their own village.

Seventh day is known as Gurupuja. On this day worship is being done at nearby hillock known as Nachani Dangar. The Jani goes to the nearby stream and fetches water. Then he goes to the village, sprinkles water by a branch of tree in each house of the village. Then the sacred Tangi and knife are returned to the goddess and kept in the house of the Jani for next festive occasion. This is known as Tandi Ulen.

This festival is observed in this way in every village of a Chaka or Des, where a particular sept of Kandhas reside. There is also royal patronage in this festival. Concerned Raja or Zamindar supplies a sheep for Toki festival every year to a village where the festival is to be celebrated.

Bhima biha or marriage of Bhima festival is celebrated in every twelve year. The festival is observed for a year long period among the Kandhas of Kalahandi. But Bali jatra is celebrated every year in honour of Bhima God. Besides they observe Kendu Nua and Dumer Nuna festival also.

The main folk dance of Kalahandi or Kandhan Des is Dhap dance. This dance named after the musical instrument Dhap which is used in this dance. Kandha youths of both the sex take part in this dance. Dhangaras dance with singing song and playing Dhap and Dhangiris dance around the boys forming circle or semicircles to the rhythm of the musical instrument. Dhangiris hold each other's waist with their left hand and holding the shoulder of the next girl in right hand and dance. Girls reply to the song of boys when they stop dancing. Girls never sing while they dance. Mainly love songs are sung in this dance.

Dhap dance is performed in different rituals to appease deities and at the marriage ceremonies. This dance shows the aesthetic and artistic views of Kandhas. Every Kandha youths of both the sexes are extempore poets. They could compose songs immediately as situation warrants. This dance helps to participants to choose a life partner also.

It is known from observation that the culture of Kanhdas of Kalahandi has some similarity and dissimilarity from their counterparts

in Kandhamal and Koraput. But the motif in all the cultures is unaltered.

A good amount have been spent since independent for development of tribals. But no tangible improvement is noticed in their livelihood pattern. Rather they are displaced from their beloved native land on the plea of development. Forest is the backbone of tribal economy. But they are barred from their forest rights by some forest laws, which had emotional attachment of tribals with forest. Globalisation in the present days is a great threat to tribal culture. Kandha culture of Kalahandi is also not free from it. So tribals come forward to resist the developmental activities in the fear that their environment will change. They can not accommodate to the changed environment and it may deculturise them. Hence it makes them revolutionary.

If we actually want to develop tribals, we must first understand their mental state and then without cultural attack we can impose industrial and developmental activities keeping in mind that it will not a burden for them and they could come to the mainstream. If the valuable tribal culture will be detribalized they will loose their tribal identity. Now it is right time for intellectuals to find a right path for development of tribals.

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Adoptability and Adoption of Tropical Tuber Crops to Climate Change

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Global Warming

The intergovernmental panel on climate change (IPCC) concluded that increasing green house gases resulting from human activity such as fossil fuel burning and deformation, caused most of the observed temperature increase since the middle of the 20th century. The IPCC also concluded that natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial time to 1950. Climate model summarized in the latest IPCC report, global surface temperature will probably rise 1.1 to 6.4°C (2.0 to 11.5° F) during 21st century. Global warming is expected to continue beyond 2100 even its emission stop because of latent heat capacity of the oceans and the long lasting of carbon dioxide in the atmosphere. An increase in global temperature will cause sea levels to rise and will change the amount and pattern of precipitation probably causing expansion of subtropical deserts. The continuing retreat of glaciers and sea ice is expected with warming being strongest in the arctic. Other effects include increase in the intensity of extreme weather, even species extinction and change in agriculture yields.

Climate Change and its Impact on Agriculture

Agriculture is considered to be one of the most vulnerable sectors to climate change. The Average temperature in Indian subcontinent has risen by 0.57ºC during the last 100 years and projected likely to rise in future to the maximum of 2.5ºC by 2050 and 5.8ºC by 2100. Beside high temperature, elevated CO_2, uneven rainfall patterns, more floods cyclones, cold waves, heat waves and frost are other effects likely to be witnessed as a result of global warming. The irrigation requirement of arid and semiarid region crops is estimated to increase by 10% for every 1°C rise in temperature. These factors are likely to cause serious negative impact on crop growth and yield and impose severe pressure on land and water resources.

Worldwide, extensive research is being carried out on crop and livestock systems to cope with climate change through development of heat and drought tolerant varieties, shifting of crop calendars, resources management practices, such as zero tillage, improved methods of water harvesting, enhancing irrigation efficiencies etc.

Hunger and malnutrition are the future threat for the world, view against the rapid population growth. Food security exists when all the people at all times have physically, socially and economically access to sufficient and safe nutritious food which meets there dietary need and performance for an active and healthy life which emphasizes food security and nutritional

security the two inter mingled terms as like both side of a coin. It is in this new paradigm of population growth vs. food supply vs. climate change. The root and tuber crops become increased significant as energy, nutritional storehouse versus adaptability to changing climate.

Climate for Tuber Crops

Cassava (Manihot esculenta): It is a tropical tuber crop which grows well in warm and humid climate. It thrives well between 25 and 35°C. Crop did not grow below 15°C. Once crop established it will not die. Crop is able to withstand dry spell of 2-3 months. It is a potential crop in a climate change.

Cassava Crop

Yam (Dioscorea alata): Popularly known as greater yam. It is tropical tuber crop hence required warm sunny weather. It is widely reported that the optimal temperature is 25-35°C under high humid conditions. However, below 20°C the crop is affected. Adequate moisture is required for the crop for good growth, development and yield of yams, which often fully met by the well-distributed rains. Stagnant water likely to damage the tubers and severely reduced the yield.

Amorphophallus Tubers

Amorphophallus (Amorphophallus paeoniifolius): Popularly known as elephant foot yam. It is a tropical tuber crop and grown under warm humid climatic conditions with a mean annul temperature of 30-40°C and well distribution rainfall of 1000-1200 mm. It can also grow at adverse temperature under well irrigated conditions. But soil moisture and temperature are the main factors which affects the tuber bulking.

Amorphophallus Crop

Taro (Colocasia esculenta): It is grown warmer part of tropical and subtropical region in upland and lowland ecosystem. It grows well in 25-32°C. It requires evenly distributed rainfall of 100 mm.

Tannia (Xanthosoma sagittifolium): Tannia is found in warm humid climate prevalent tropical regions of the world. For well sustained growth and production, it requires an evenly distributed rainfall of about 1500 mm.

Arrowroot (Maranda arundinacea): It is known as Palua in Orissa. Arrowroot grows under warm and humid conditions. A temperature of 25-30°C is required with average rainfall of 1000-1200 mm with one or two dry spell months to grow rhizome.

Coleus (Solenostemon rodundifolius): It is popularly called Chinese potato. It can well grow in moderate drought conditions. It is a tropical tuber crop grown under warm humid climatic conditions with a mean annual temperature of 25-30°C and well distributed rainfall of 1000-1200 mm. But it can also grow well at adverse temperature under well irrigated conditions.

Greater Yam Tuber

Conclusion

Tuber crops are capable of tolerant to mid season drought and high temperature. Being long duration crop, its spread is limited by length of rainy season under rainfed conditions. Increase of temperature due to global warming may shorten the duration of tuber crops. Hence it may be grown in short rainy season areas also. Further being tropical crop, increase of temperature and CO_2 will enhance its productivity when water is not limited.

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Oyster Mushroom Cultivation : A Profitable Enterprise - A Case Study

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1. Name of the Enterprise/Practice/ Technology: Oyster Mushroom Cultivation

2. Name and address of the farmer:
Maa Majhigouri SHG
Village - Gadiakhalla
GP - Gadiakhalla
Block - Gunupur
Dist – Rayagada

3. Initial Status:

Mushroom cultivation in Rayagada district is negligible during last few years although there is a rising trend in its demand. In comparison to other districts of Orissa, mushroom production is quite low and is mostly procured by the method of collection from nearby forest areas which is limited to specific period of a year. The climate of Rayagada district is very much congenial for cultivation of various types of mushroom more or less throughout the year. Almost 70% people of Rayagada district belongs to the category of small and marginal farmers and landless labourers. Their income level is quite low for a sustained livelihood. In order to raise their family income mushroom cultivation was considered to be an alternative source of income generating actively through SHG members.

Gadiakhalla, a village in Gunupur block of Rayagada district is situated at a distance of

6kms from the KVK, Rayagada. The village comprises 231 households amounting to population of about 1156 number. Among them 30% are SC, 20% ST and remaining are of OBC and General Castes. About 82% of the women population are landless agricultural labourers. Usually the month of Oct-Feb are lean periods for rainfed agriculture and hence the farm women were encouraged to grow Oyster mushroom through SHG during this period to supplement their family income.

4. KVK intervention : Mushroom is grown out of agriculture waste. Use of such waste for mushroom production is a better and profitable ecofriendly way of waste disposal. The technology involved in mushroom cultivation is very simple and can be acquired by any person after a short

training. Mushroom growing as a cottage industry is quite valid for the SHG women due to its low capital investment and high yields obtained even under controlled rural condition. The awareness for mushroom has been created among the general consuming public. Mushroom are good supplement for protein lacking diet and can be easily cultivated indoors and marketed profitably. Keeping in view the above fact, FLD on oyster mushroom cultivation was organized in the village Gadiakhalla.

5. Innovative extension approach: KVK, Rayagada introduced the FLD on oyster mushroom cultivation in the village Gadiakhalla, GP-Gadiakhalla of Gunupur block. Similarly training programme on oyster mushroom cultivation was organized for SHG members. Necessary technical literature was provided to the farmers, field day was arranged to create awareness and interest among the farmers for mushroom cultivation. KVK is instrumental is imparting training to the farmers and farm women.

6. Details of the technology:

Raw material requirement:

(i) Paddy straw

(ii) Polythene bags

(iii) Spawn

Soaking:

Cutting of straw into 2 to 2.5" size

Soaking in clean cold water for 12-16 hrs

Draining excess water

Pasteurization of the straw pieces in boiled water at temp. 70-80^0 C for 45 minutes to 1hr.

Draining of excess water & dry in shade to get 65% moisture.

Laying of bed & spawning:

Filling in the polythene bag (65cm X 35cm) with sterilized straw bits (6" ht)

Sprinkling of ¼ part of spawn over it at the periphery only.

Again covering with sterilized straw pieces to another 6" ht.

Repeat spreading of straw pieces and spawn for 4th time.

Covering the top layer with thin layer of straw & tie the polythene bag at the top & making 20 to 25 holes for exchange of gas & keeping it in dark room.

Spawn running :

Removing the polythene cover after 16th day. Arranging the beds on the sika, leaving a space of 6" between the bed.

Sprinkling of water twice a day as per the weather to keep the bed moist.

Harvesting :

Harvesting fresh mushrooms after 7 days by twisting carefully when the edges starts upward curling.

1st flush – 1 kg

7 days after 2nd flush – 250 gm.

7 days after 3rd flush – 250 gm

Marketing of fresh mushroom.

7. Adoption of the technology and benefit to the farmer:

Inspired by the easy method of cultivation, good yield and economy of production and being exposed to extension interventions made by KVK, Maa Majhi Gouri SHG's member have started practicing oyster mushroom. Cultivation in small scale under the guidance of scientists of KVK. As a result the beneficiaries of SHG group could harvest 120 kg mushroom from 100 beds and generate profit of about Rs.4000/- within a month by selling mushroom in the nearby market at the rate of Rs.50/- per kg. The success of mushroom production not only encourages other three SHGs of the adopted village but also women of neighbouring villages to grow mushroom successfully and profitably.

9. Farmers' reaction and feedback :

The farm women of the village Gadiakhalla were surprised with the success of mushroom cultivation. They could not just believe such a good amount of net profit in less than a month period. Now they are interested to take up mushroom cultivation as a major income generating activity throughout the year due to its heavy demand in Gunupur area.

10. Extent of diffusion effect of the newly adopted technology:

The net profit in mushroom cultivation has attracted the other three SHG (Maa Mangala, Maa Radharani, Maa Bhairabi) for practicing the mushroom cultivation in small scale. People of neighbouring villages are now enthusiastic in producing mushroom in large scale. Different NGO's in Rayagada district decided to replicate this successful programme in different blocks of the district. KVK is instrumental in imparting technical support in this regard.

11. Follow-up action:

KVK, Rayagada has documented the success and has developed plan to promote this technology. KVK has planned for further expansion of technology in Rayagada. Apart from this KVK printed literature TV coverage of the technology has been organized for wider dissemination of the technology.

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Twin Temple of Gandharadi

Ramesh Meher

Introduction

Etymologically, the word "Temple" is derived from the Latin word "Templum", which means an open or consecrated space or a building inaugurated by an augur. It is generally conceived as a building used for the worship of Hindu gods and goddesses. In its primitive sense, this word corresponds to a place marked as sacred to a God, in which the house of God may be erected. In its usage, it is rather employed in a restricted sense to denote various religious affiliations except Christianity and Islam[1]. The Twin temple of Gandharadi is situated close to the right bank of Mahanadi at a distance of 13 Kms from Boudh towards Sonepur and can be reached from the State Highway by a road of about 3 Kms. In the Bhanja copper plate charters of 9th- 10th centuries, Gandharadi has been mentioned as Gandhata, Gandhatapati and Gandharadi. It flourished as a Centre of Religion and culture under the rule of the Bhanjas of Khinjali Mandala. The twin identical temples dedicated to Siddhesvara (Siva) and Nilamadhava (Vishnu) erected on one stone platform of low height bear witness to the contribution of the Bhanjas to the

temple architecture of Orissa[2]. They fluctuate from each other in their respective ayudhas, as one is dedicated to Vishnu and other to Siva. T. E. Donaldson has examined that the temples were surrounded at the four corners of the platform by small shrines so that as a unit the temples formed the Central shrine of a panchayatan plan[3]. R.D.

Banerjee also declares that there were foundations of smaller temples upon the platform[4]. But unfortunately these are no longer in evidence nor are there any symbol of the collection of the loose and broken images of Durga, Vamana, Matsya, Kurma and *Varaha* that he mentions. The only image intact are two large standing images of Vishnu, carved of fine grained chlorite and placed inside the Nilamadhav temple one within the shrine and the other in a corner of the *mukhasala.* A *Siva Linga* is worshipped as Paschima Somanath, few yards away from the temples. Whatever now remarkable is that two identical beautiful temples are standing on a common raised pedestal on the vast plain area of the village Gandharadi.

Every testimonial of the temple architectures in Orissa and central India corresponds to a regional manifestation of the nagara temple style and has certain common features, being derived from the same arch type. The entire body of those temples acquire curvilinear spires and square plans with projected angles of *sikhara* type or Rekha order and it ultimately became the dominant form of temple architecture in Orissa. The earliest temples now extent represents the natural products of that category. But the Orissan temple architecture by reason of its own distinct individualities and long history of evolution soon came to acquire for itself a distinct nomenclature i.e. the Kalinga style. Prof. R.D. Banerjee has drawn our concentration to an inscription of the pre-Muslim period in the temple of Amriteswara at Holal in the Ballary district, in which mention has been made of four classes of temple *Nagara*, *Kalinga*, *Dravida* and *Vesara*.[5] Prof. Banerjee observation has further been supported by another scholar, Mr. D.P.Ghosh who has shown that certain well-marked peculiarities distinguish the Orissan group of temples from the *sikhara* temples of North India, Central provinces, Rajputana, and Gujarat. The temple of Gandharadi, about which we have discussed their architectural features and decorative motifs as well as the iconography of the images available there certainly played an important role in the evolution of *Kalinga* temples. Each of these temples possess the common features of indigenous sub-styles of temple architecture of Central India and Orissa and pave the technique for full-fledged Ka*linga* style which is marked entirely in the *Linga*raj temple of Bhubaneswar[6].

The ideal specimens can be exploited as a source of historical knowledge, unless they are placed in their proper sequential positions. On the other hand there is no epigraphic source available for the determination of the dates of these temples Gandharadi. However these temples can be co-related on the basis of their architectural features, decorative motifs, sculptures and iconography of the images to one or other of the monuments of which the chronology is known as analytical study of the dated and datable temples and cumulative consequences. When applied to study these undated temples to bring out this correlation in an emphatic manner, it is possible to divide again the undated temples as cognates of one or other of the dated and datable temples. We may not be able to find out the exact date of their construction but we can place them to particular times as cognates of the particular temple of which the date is known. Such a chronology, though approximate is borne out by the logic of the evolutionary process experienced by the architectural movement, through different epochs of Orissan history.

Orissa appears to have pursued the construction of stone temples on a large scale, starting approximately 600 A.D. till the end of the Hindu supremacy. The number and design of

the mouldings in the *pabhaga* change during the long evolution of the Orissan temple. On the earliest surviving temple *pabhaga* consists of three mouldings, which partakes of the *bada* division. In addition to this on those early temples, the number of *pabhaga* moldings used to differ on *Jagamohana* from that of the shrine. Among the temples of Bhubaneswar, which are dated by K.C.Panigrahi in his work "Archaeological Remains at Bhubaneswar" are Markandesvara (Early 8th A.D.) Vaital (775A.D.) and Sisiresvara (800A.D.)[7], which are built under Bhaumakara rules have the latest surviving examples of this type of base mouldings. As a contrast to this base moulding of shrine and *Jagamohana* are four at the twin temple of Gandharadi. In this respect we hardly agree with K.C.Panigrahi that Gandharadi was a contemporary of Sisiresvara, Rather we may safely assume that these twin temple must have been built in a later date to the above temples of 8th Century A.D. Mukteswar (950 A.D.) and Gouri, dated to 10th century A.D. are the earliest examples of having five mouldings on *pabhaga* at Bhubaneswar.

By the side of Gandharadi, a *kumbha* is virtually found in between first two moulding i.e. *khura* and *patta*. T.E. Donaldson marked that *kumbha* as an ornamental detail of the temple are not a part of the standard repertory of the Orissan *Silpin*, it is apparently that this design is the outgrowth of outside influence[8]. The most obvious source is Chhattisgarh temples, where free standing *kumbha- stambhas* form part of this architectural idiom. In the Lakshmana temple of Sirpur, we can mark the *kumbha*, as a part of the *pabhaga* moulding. The *champaka* leaf of the *pabhaga* already appears on the Lakshmana temple of Sirpur datable to the late 7th Century and most likely filters into Orissa from Chattisgarh towards the end of the 9th century along with Somavamsi. Kesharis[9]. *Champaka* leaf is used as one of the decorative motifs of *pabhaga* moulding at Gandharadi. According to the above observation of Donaldson these twin temples should be dated to the end of the 9th Century. Tirthesvara temple of Bhubaneswar, acquires the same base moulding as at Gandharadi and Churasi. Vidya Dehejia indicates that these three temples should be place in an equal cognate of transitional phase[10], and constructed just earlier than Muktesvara of 10th century A.D.

Pista

The high *pista* of Gandharadi contributes another peculiar feature for the determination of its age. *Pista* on the earliest Orissan temples is generally small and devoid of decoration. On the Sisiresvara and Vaital *Deula*, it is seen only 8-9 inches above the ground, but follows the basic plan of the *deula*. On the other hand it is observed that the architectural tradition in Chattisgarh encouraged the high *pista* as on the brick Indralath temple and Sirpur though devoid of decoration. Gandharadi infatuated a decorated high *pista* combining the Orissan pattern with Chattisgarh. It offered the most basic example where the *pista* is high enough to duplicate the programme of the shrine but devoid of figure motifs. The *pista* of Boudh is higher then Gandharadi, with a plenty of figure motifs, for which Boudh temple is considered to be built later than Gandharadi. A similar type of *pista* is repeated at Ganeswarpur in Eastern Orissa with the sides being decorated with Krishnalila themes and erotic images. Vidya Dehejia places Ganeswarpur and Boudh along with Muktesvara as the products of the culminating phase[11] in the development of Orissan temples

Bada

The *bada* of the most primitive surviving Orissan temple is *tri-ratha* in plan as a contrast to the *Pancharatha* plan of the *gandi*. These temples were built mostly in Bhaumakara period

and in ancient Kalinga region. Most significant among them are Satrughnesvar, (575AD), Parasuramesvar(650AD) group of temples and Mukhalingam. It is in those temples, only the *rahapaga* continues vertically from *pabhaga* to the *bisama* of the *gandi*, but the other *pagas* of the *bada* ends beneath the *baranda* giving way to the independent *Pancharatha* design to the *gandi* above it. Consequently there was no decorative relation existing between the *bada* and *gandi*. For which, they are regarded by Dehejia as the temples of formative phase in the long evolution of Orissan temples[12]. In such temples the side *pagas* on the *bada* are not well projected and appear more like a window due to there small size in length and width. It is for the first time on the long west side of the *bada* of the Vaital deul (775A.D.) that pagas alignments became different. Five independent vertical segments projected from the wall each with a niche which begins above the pabhaga mouldings. They are all of the similar size, however, are conceived as engaged pilaster rather than true *pagas*, filled in with stone work. In the next phase, this arrangement is further developed in Sisiresvara(800A.D) where five pilasters but less projected appear on each side of the bada. This indigenous style of Bhauma period mingled with pillared *mandapa* as appears at Rajim in South Kosal, gave rise to the well projected five *Pagas* on the *bada*. This process appears to be first experimented at Gandharadi. There are five well-projected *pagas* on each side of the *bada* co-relating the *pancharatha* plan of the *gandi*. The *kanikas* on the *bada* is completely integrated to that of the *gandi*. In this respect it is assumed to be built later than Sisiresvara. There are also good deal of dissimilarities appearing between Gandharadi and Sisiresvara as far as the images of the *paga* niches are concerned. A noteworthy feature of the images enshrined in niches on the *bada* of the Sisiresvara is that they have all been made of two or three blocks of stone contained in two or three courses of the walls. Consequently, they have been made part of the walls with the result that more of the side deities are missing from the Sisiresvara and its cognate members. This design is not followed at Gandharadi as an effect of which the niches are seen without deities. In this respect it will be difficult to assume Gandharadi to be included as the cognate member of Sisiresvara Group.

The use of *Vajramundis* and *Khakhara mundis* is considered as carry over from earlier temples. Among the temples of eastern Orissa, so for dated, it is on Suklesvar and at Bankada, where the *pagas* are designed first as *Vajramundis* rather than as flattened *kumbha stambha* as at the Sisiresvar and Vaital Deul. In the process of development and gradual transformation the previous *Vajramundi* took a new shape of elongated *Khakhara mundi*. Simhanatha temple situated near Gopinathapur of Cuttack district, datable to late 8th century A.D. was the earliest, which possess the elongated *Khakhara mundis*. In the twin temples of Gandharadi embracing the influence from South Kosala *kanika* are shaped as pilasters with miniature *vajramundis* at this base. While the *anuratha* is fashioned as an elongated *khakhara mundi* containing from the alignment of the *pabhaga*, which has a *talagarbhika*, inserted beneath the niche, crowned by a small *vajramundi* below *baranda*. The *raha* is also designed as a wide *vajramundi* with flanking offset rather than a truncated *rekha* as on early temples. The *khakhara mundis* of Gandharadi being crowned by *vajramastaka* is too developed to have its own *tri-ratha* plan. It is experimental that in Eastern Orissa, the use of *vajramastaka* became familiar in the temples of late 9th Century A.D. At Gandharadi, there are no *stambhas* inserted in the recess separating

each *paga* as a contrast to the Panduvamsi (Chhattisgarh) tradition where the *raha* is used to be flanked on each side by an engaged *naga stambha*. The *jangha* is single story as contrast to the two-story *jangha* in the temples of 11th century in Orissa.

Till the period of 8th century, the *tala garvika* moulding were not well developed in the raha and subsidry niches. In the temples of Markandesvar and Sisiresvar the *talagarvika* is like a *baranda* moulding of two fold division. The indentation beneath the *raha* is gradually filled with a series of moulding which develop into a miniature shrine or *mundi* as at Badagaon, Paikpada, Simhanatha, but without any figure motifs. It is at Gandharadi where a *talagarbhika* of elongated *khakaramundi* with figure motifs housed in a niche at the base of the *raha* and is inserted beneath the niche of the *anuratha*. At the same time a small *Urdhva garbhika* is added above the niche. But we know that with the development of the two storeys *Jangha* in the 11th century, the *urdvha garbhika* is eliminated from the top of the niches.

On the earliest temples of Orissa, the *baranda* consist of two projecting mouldings separated by a recess. The projecting mouldings are shaped like a *khura* and duplicate the decorative programme of the first of the *pabhaga* moulding. The *muhanti* relieved with a crowd of scroll work, the sloping upper surface is decorated with spaced *Chaitya* design alternating with figure motifs where as the lower moulding caps the *Jangha* the upper moulding serves as the bottom for the first *bhumi* division of the *gandi*. Universally the *baranda* division on early temples evidently articulated though in 8th century at Bhubaneswar, due to innovative experiments with *paga* designs, its demarcating functions is partly obfuscated while towards the end of the 9th century, the upper moulding no longer serves as the bottom of the first *bhumi* in *gandi*. Similar to this with the development of a *pancharatha* plan for the *bada*, the *baranda* moulding at Gandharadi is a plan horizontal recess carved in region at top and devoid of decorations. In so many places these temples have Nayika figures contemporary to the females of Bhubaneswar, which were already dated to be constructed in the last part of the 9th century A.D.

The *Jangha* is crowned by a broad moulding serving as a *baranda*. The interior walls at Gandharadi enclose four pilasters on each side, which help to create a modified cruciform plan similar to that of the Vaital *deula,* though it has been suggested that originally there may have been four pillars arranged in a square at the centre as in pillared *mandapas*. Above all, the exterior decoration at Gandharadi is quit equal with temples at Ganesvarpur and Chaurasi of eastern Orissa. But these two temples represent the end of an evolving tradition of the rectangular plan of the *Jagamohana*. The square ground plan of *Jagamohana* becomes familiar in later temples. Muktesvara, which is dated to late 10th century A.D. has a semi square ground plan with the long sides only three feet wider than the width so that it appear almost equal. Besides figure motifs are engraved on the lateral sides of *Jagamohana*, which is not present at Gandharadi.

Gandi

The *Gandi* of these twin temples is *pancha ratha* in design continuing the five-fold arrangement of the *bada,* so that the *pagas* extend up the height of the *deula*. The *kanika pagas* are divided into seven *bhumis* by *amlas* with each *bhumi* again subdivided into four-*bhumi barandika*. *Raha paga* is decorated with five-spaced *chaitya* motifs rather than three as on early Orissan temples. *Anuraha* is left plain. In the decoration of the *gandi*, it exactly equals with the Kapileswar temple at Charda.

Mastaka

The *mastaka* of Nilamadhava temple is crowned by an *akasa chakra* as is gradually used else where. But the *akasa Lingam* crowing Siddhesvara is quite unusual. Parasuramesvara temple of Bhubaneswar exactly crowned by an *akasa Lingam* as on Siddhesvara at Gandharadi. According to Donaldson *Lingam* appears as the crowning members on some early as well as on later temples, most likely representing 5th head of Siva which points sky ward[13] .It is difficult to consider the age of the temples on the basis of the *ayudha*s. *Jagamohana*, the earliest surviving impages. *Jagamohana* is similar to that of the Parasu*ramesvar* temple which is rectangular in plan. With terraced roof that slopes in two stages, Gandharadi is a near duplicate of *Jagamohana* of the Sisiresvar. On the Sisiresvara, the *jagamohana* is rectangular in shape with similar terraced roof. Having its own back wall and the interior walls are lined with spaced pilasters eliminating the pillars as noticed at Parasuramesvar. Each side of the *bada* is divided into three *angas* like Uttareswar and Mohini temples. The center *anga* is designed as a large niche which cut through the *pabhaga* moulding. The side *angas* are shaped as *Vajramundis*. The *mundis* are crowned by *vajramastaka*, which contain two superimposed *chaitya* medallions. The *gavaksha* projection of the centre of the *bada* of *jagamohana* was not well projected until 9th century for which there is no *gavaksha* projection at Sisiresvara.

Among the temples of Bhubaneswar, it is on the Simhanath temple where *Gavaksha* as a central *Anga* appeared for the first time though projected slightly. The terraced roof slopes in three stages, rather than two as on early temples. *Gavaksha mandana* is absent in Simhanath temple. But at Gandharadi the beautification is a step forward to Simhanath. The *Jagamohana* is rectangular in shape and has a roof slopped in two stages but with additional covering slab. The three stepped recess at Simhanath. The *bada* is *trianga* in plan with the well-projected *Gavaksa* and entrance portal being flanked on either side by *naga / nagi* stambhas. The *gavaksa* is decorated with framed window filled with banka*jali* on the lower half while the upper half has an alignment of three elongated *Vajramundis* separated from one another by a thin *stambha*. The *pagas* flanking the *gavaksa* are decorated with three elongated *mundis* separated from another by a thin *stambha*. This alignment of pilaster alternating with elongated *mundis* also appear on the *deula*, so that for the first time the decorative motifs of the *Jagamohana* duplicate those on the deula to crowns the niche of the each mundi with an abbreviated *urdhvagarbhika* at the top. Above psychoanalysis shows that Gandharadi should be dated later to Sisiresvara and Simhanatha.

Conclusion

From the above discussion, it is clear that a comparative study of these twin temples also agrees to the above fact that, they were built in the 9th century A.D. It is the earliest temple of Orissa to assimilate the Central Indian tradition of the temple architecture with the indigenous Orissan style, with the innovations thus filtering from Central India brought a change in the overall design prevailing in the temples of Orissa. It led the Orissan temples to march towards perfection in height, components and decorations. The process culminated in the evolution of *Kalinga* temples under the patronage of the Somavamsis particularly at Bhubaneswar from the 10th century onwards. Thus the twin temples at Gandharadi play a valuable role in the evolution of Kalinga Style temples of Orissa by assimilating two original

and indigenous styles. Gandharadi bears all transitional characters of temple architectures. It possesses no similarity with earlier Orissan temples but creates a class of its own. The twin temples of Gandharadi definitely succeed Markandesvara, Vaital, Sisiresvara, Simhanath and preceeds temples of Boudh, Ganesvarpur and Muktesvar.

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Ayurvedic Approach to Good Health and Happy Life

Dr. Dinabandhu Moharana

In the eyes of Ayurveda "Health is the supreme foundation of virtue, wealth, enjoyment and salvation. Diseases are the destroyers of health, of the good life and even of life itself. Thus, has arisen the great impediment to the progress of humanity."

Ayurveda is a life science - the science of life wherein are laid down the good and the bad life, the happy and unhappy life, and what is wholesome and what is unwholesome in relation to life, as also the measure of life. The science relating to life is regarded by the philosophers as the most meritorious of all the science because it teaches mankind what constitutes their good in both the words.

Life is spoken of as the union of the body, senses, mind and spirit. The body, mind and spirit together are, as it were the tripod. The body and the mind are both considered to be the abodes of disease, likewise, of well-being. The cause of wellbeing is their harmonious and concordant interaction. The cause of disease, psychic or somatic, is either erroneous, absent or excessive interaction.

The objective of the science of life is establishing equilibrium of the body elements. Finally, the Ayurveda reveals that the morbidity of the body is remedied by medication; the morbidity of the mind by spiritual knowledge, philosophy, fortitude of the mind by spiritual knowledge, philosophy, fortitude, remembrance and concentration.

The Nature of Happy life : Life of such a man is called happy as is not afflicted with either bodily or mental ailments, as is endowed with youth, strength, virility, reputation, enterprise and boldness befitting his abilities, is actuated by his deeds, the combined urge of knowledge, science, the senses and the sense objects, is possessed of multifarious and delightful amenities occurring from great wealth, whose efforts are prosperous and who can plan his likes. A life to the contrary is deemed unhappy.

The Nature of Good Life : The life of that man is said to be good who is a well-wisher of all creatures, who does not covet other people's goods, who is a teller of truth, who is peace loving, who acts with deliberation, is not negligent, is devoted to the three ends of life viz., virtue, wealth and enjoyment, without letting anyone to come into conflict with the other two, who is reverential to those who are worthy of reverence, who is of a scholarly, scientific and restring disposition, partial to the company of elders, envy, pride and conceit, who is constantly given to charitable acts, and contemplative of the good in this world and the next and endowed with memory and understanding.

Life of the opposite nature is said to be "not good".

Code of Conduct For Healthy Living : The wise man who seeks happiness both here and hereafter, should exercise the highest care in

selecting what is wholesome in the matter of food, conduct and behaviour.

The length of life is matter of care and husbandry. The opposite condition leads to death. He who rightly observes the rules of health as laid down here will not be deprived of the full measure of hundred years of disease less life.

Virtues of Clean Habits : Virtues of cleaning the teeth, scrapping the tongue and cleansing the mouth, message and bathing, wearing of clean apparel, trimming of hair, beard and nails, frequent ablution of the feet and the excretory orifices, have all been emphasized. Like the lord of a city in the affairs this city, a charioteer in the management of his chariot, so should a wise man be ever vigilant in the care of his own body.

By degrees, the wise man should free himself from unwholesome habits; also by degrees he should develop wholesome habits. By gradual withdrawal, addictions do not revert and wholesome, gradually acquired, become firmly implanted.

Virtues of Measured Diet : Food is the principal factor which materially contributes to the strength, complexion, vitality of animated being. That should be known as the proper measure of food which when taken, is digested in due time without impairing one's health.

An excess of surfeit of food is markedly harmful unless the gastric fire is increased by hard exercise.

Importance of Exercise: That activity of the body, which is meant to increase its strength and firmness is regarded as physical exercise. It should be précised regularly in the right measure. Lightness, capacity of work, firmness, tolerance to hardship, subsidence of humeral discordance and stimulation of gastric fire accrue from exercise.

Fatigue, exhaustion, wasting, thirst, asthma, cough, fever and vomiting result from over exercise.

Ethical Conduct : Mind control consists of restraining the mind from the desire for unwholesome objects.

A wise man should not suppress the natural urges of urine, faeces, semen, sneezing, yawing, hunger, thirst, sleep, tears, and deep breathing after exertion.

On the other hand, those desirous of their welfare both in this and the next world, should suppress the rash and evil impulses of the mind, speech and body. The wise man should control the impulse of speech that is harsh, extravagant, insinuating, untrue and untimely. One should control the impulse for all such activities as are injurious to others such as adultery, theft and violence.

Once should have recourse to such means of livelihood as are not contrary to the dictates of religion. One should be devoted to peace and scholarship. Living thus, one attains happiness.

Do not give way to anger and joy, do not nurse your sorrows, be not be arrogant in success and dejected in defeat, remind yourself constantly of the vanity of things, be decided as to causes and their effects and consequently devote to benevolent enterprises; do not grow complacent with your achievements; and who is generous, just, truthful and forgiving and who gets along well with his relatives.

Meaning of Medicine and Aim of Therapy: Medicine is that, which being well administered, becomes an equalizer of increased and diminished elements at the same time. It brings down the excessive element and arguments the deficient one.

Indeed this alone is the end to be sought in the employment of medicine, as also in the observance of wholesome habits, that equilibrium of the elements may be achieved or maintained as the case may be. For it is only with a view to help maintain the balance of elements that the

intelligent will make use of a balanced diet. By the uses of like and unlike food and exertion, the increase and diminution of body elements and brought about opportunity to restore equilibrium.

There is in the world no substance that may not be used as medicine, in this or that manner, for this or that purpose.

Medicine is of two kinds - one kind is primitive of vigour in the healthy. The other is destructive of disease in the ailing. The opposite or medicine is also of two kinds - the one causing immediate disorders and the other causing remote ill-effects.

That which of contrary character to medicine is to be known as 'contra-medicine'. It is unfit for use. We shall confine in describing that which alone is fit for use.

The Four Pillars of Treatment : The physician, the drugs, the attendant and the patient constitute the four basic factors of treatment. Of these four, the physician occupies the chief place, being at once the knower of disease and drugs, the instructor of the attendant and patient, and the prescribe of medicine and regimen.

Qualification of Physician, Nurse and Patient : Clear grapes of theoretical knowledge, wide practical experience, and skills, purity of body and mind, these are the tetrad of desiderata in a physician. The qualifications in a Nurse according to the Ayurvedic approach-knowledge of nursing are skill, affection for the patient and cleanliness. These are the tetrad of desiderata in the attendant. Recollection, obedience to instruction, courage and ability to describe his ailment are the tetrad of desiderata in a patient.

Drugs, their Potency and Sources :

Substances are classified into three groups :

(1) Some rectify the discordance of body elements.

(2) Some vitiate the body elements.

(3) Some are conducive to maintenance of good health.

Again, Substances can be classified differently in three groups as animal, vegetable and mineral. He is the best physician who knows the science of administration of drugs with due reference to clime and who applies it only after examination each and every patient individually.

A drug that is not understood perfectly is comparable to poison, weapons, fire and the thunder bolt, while the perfectly understood drug is comparable to ambrosia. The drug whose name, form, and properties are known, or the drug which though known is not properly administered, will cause disaster. Even acute poison is converted into an excellent medicine by the right method of preparation. While, even a good medicine may act as acute poison if improperly administered.

Therefore, the intelligent man who desires health and long life should not take any medicine prescribed by a physician who is a stinger to the art of application. One may survive the fall of a thunderbolt on one's head, but one can't expect to escape the fatal effects of medicine prescribed by an ignorant physician.

That is the right medicine which makes for health and he is the best physician who relieves people of disease.

Aims of Therapy : The physician will try to cure the diseases which are curable adopt palliative measures in cases where palliation is the only remedy that can be offered; and give up a case which is beyond all medical treatment.

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Documenting Indigenous Traditional Knowledge in Odisha

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Introduction

The people in Odisha were more traditional in nature believing the faith and practices of the local communities. They happened to manage their livelihood through agriculture and maintained an indigenous life with their own knowledge system. They used to maintain the long-standing traditions from their ancestors and spread the knowledge in different spheres of livelihood. Such socially generated knowledge is popularly called as local knowledge. The on-going practice of using such knowledge for indigenous communities established the belief that such knowledge used in traditional manner was fruitful for the people. In course of time such personalized knowledge took the shape of Indigenous Knowledge (IK) which was confined to a particular community and locality and specific knowledge seekers find the effective use of such traditional knowledge for indigenous people and are interested to preserve the knowledge for the communities. It is an established fact that India has long and strong racial, cultural and ethnic groups that generate a traditional knowledge system for its people. The ethnic minorities, rural and tribal populations, women and other disadvantaged communities in India who are deprived of economic, political and social benefits are more dependable upon such knowledge system for their livelihood. With the modernization of the present society, the needs of those disadvantaged populations were brought to the limelight and their knowledge system was given the importance. Similar phenomenon is gaining ground in other countries in the world where the local knowledge of the communities are treated as the real knowledge for survival. The concept of indigenous knowledge gained its world wide recognition through the United Nations Conference on Environment and Education in1992, World Conservation Strategy of International Union and Conservations of Natural Resources in 1980, Brundtland Commission, and World Commission on Environment and Development, 1987. These events recognized the existence of indigenous knowledge in every country, society, culture. Since India has a long history and much enriched culture there is abundant reservoir of indigenous knowledge in every part of the country. Similarly Odisha is a historical land having enriched cultural heritage which has varied communities and immense resources. Its flora and fauna are vast and varied in nature. The State has a large number of tribal communities who appear to live on their own knowledge system. The paper is intended to unfurl the essence of indigenous knowledge in Odisha and discuss the need for documentation of indigenous knowledge system for the State.

Concept and Definitions of Indigenous Knowledge

The term indigenous knowledge has different connotations such as, traditional knowledge, local knowledge, community knowledge, rural peoples' knowledge, farmers' knowledge. Although the concept has different forms the meaning appears to be synonymous. Acccording to Grenier (1998) indigenous knowledge is the traditional knowledge of the local community existing within and developed around the specific conditions of women and men indigenous to a particular geographical area. Basu (2009) do not find the restrictions of the concept and expanded its scope in that the term indigenous knowledge is not confined to tribal groups or the original inhabitants of an area. It is not confined to the rural people rather any community possessing indigenous knowledge- rural or urban, settled or nomadic, original inhabitants and migrants. Indigenous knowledge is referred to not only to the knowledge of indigenous people but also the intellectual property of other communities. There are many facets involved in the indigenous knowledge such as, *information* of the communities, *beliefs* on religious faiths, *tools* of using in agriculture, *materials* in house construction work, *experimentation* in farming and healthcare, *natural resources* in flora and fauna, *human resources* and *expertise* in skilled artisans, *education and learning* and *communication* of information. Indigenous knowledge is found in peoples' memories and activities and is expressed in the form of stories, songs, folklores, proverbs, dance myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipments, materials, plant species, and animal breeds (Basu, 2009).

Significance of Indigenous Knowledge

Indigenous knowledge is primarily inherited from the ancestors through generations of the community. Such knowledge stands as the main source of utilization and management of resources. It is not only a self centered knowledge but a collecting knowledge, the collection of phenomena and experiences which the older people also. Such knowledge is confined to few people who shared influenced others in a restricted manner. In a particular tribal society Jani is the master of all religious ideas and practices. Other people are imparted to know the religious ideas and practices by Jani which is ultimately used for individual welfare of the common people. The knowledge with personal perseverance of Jani is self centred. On the other hand that common knowledge is about the general livelihood pattern of that community which is more or less to all in the society. Those are very practical knowledge which is primarily earned his livelihood. The making of household artifacts, knowledge about cultivation, health care etc. are major arena of the indigenous knowledge development.

Indigenous Knowledge is primarily referred to the long standing traditions, belief and practices of certain regional, local and indigenous communities. The people in older times were more spiritual, religious, God- fearing and believing in virtuous livelihood. They believed that their living will be happy and prosperous if they work in a systematic manner with certain beliefs and practices. Such beliefs of a locality bear fruits for their existence. Indigenous Traditional Knowledge is developed and adopted continuously to a changing environment and passed on from generation to generation. The livelihood of rural population mainly depends on certain experience-based knowledge which is essential for their survival. Such knowledge system has embraced

many areas of the people's activities such as health, education, agriculture, animal husbandry, handicrafts, religion, culture and tradition of a local community.

The people in those days used to practice such knowledge for sustainable development. The knowledge is basically used to cure diseases of human as well as animal and to develop nutrition, to bring out better agricultural systems in farming, to improve the arts and craft, and to maintain the religious practices and astrological beliefs. Indigenous knowledge is embedded in community practices, institutions, relationships and rituals. It provides the basis for problem solving strategies for the communities.

Sources of Indigenous Traditional Knowledge

The sources of the traditional knowledge mainly derived from the human experiences, beliefs and practices which are collected from several sources. There are also semi-recorded information such as manuscripts, photographs, and folk literature and grey literature. Ancient people had developed the Vedas, Puranas, religious books, grey literature, ethno-botanical texts and archaeological deposits which were the sources of knowledge for those people. Those sources give detail account of the life of the ancient people and the method of living in a prosperous way. Again those sources also give information about biotechniques, medicinal knowledge, breeding techniques, agricultural farming systems, healthcare techniques, religious and astrological guidelines and cultural artifacts. Some of the indigenous traditional knowledge are available in written form in primary, secondary and tertiary sources of information. But most of the indigenous traditional knowledge are un-documented and are available orally or in memory of the group of the community of a region or area. Indigenous Traditional Knowledge in Odisha is widely scatted and fragile and there is a need to integrate those distributed sources of information in concrete form. Although religious books which give a lot of information about indigenous traditional knowledge are least used in present time. There is greater need to accumulate and acquire to collect information and make documentation of such knowledge. While tribal communities frequently use such knowledge which is essential to trace the sources of information of indigenous traditional knowledge among tribal communities.

Documenting the Indigenous Knowledge

The origin of indigenous knowledge can be traced back to the ancient period. People used such knowledge from generation to generation for their livelihood in an unaccounted manner. There are no such written documents for recording and dissemination of such knowledge. Brokensha (1990) found that such knowledge system is essential for development. It must be gathered and documented for a particular community.

Warren *et* al (1993) commented that the collection and storage of indigenous knowledge should be supplemented with adequate dissemination and exchange among interested parties using newsletter, journals and other media. In order to develop an indigenous traditional knowledge system in Odisha, it is essential to prepare a documentation and archival repository. A division under the state archive may be opened which primary role is to trace the documents available and collect those sources of information. Although collection of indigenous traditional knowledge is difficult, adequate attention is necessary to convince the indigenous traditional knowledge owners to share their knowledge by protecting their intellectual property. After collecting those knowledge it is essential to record

the list of such indigenous traditional knowledge facets available to different parts of the state. The most important responsibilities is to develop documentation of indigenous traditional knowledge in particular library and information centre. The next step is to develop a database or repository of indigenous traditional knowledge in Odisha. It is required for making a selection and scrutinization of data to be stored in a database. The storage and retrieval of indigenous traditional knowledge is a difficult process which requires classification, indexing and assigning metadata for making the database accessible to the users. While considering the storage, steps may take to consider classification of textual data, graphical, pictorial, audio-visual picture of indigenous traditional knowledge in database. By developing the database is not the end of the process, the library has to prepare the strategy of information services to disseminate information. It is essential to propagate the use of indigenous traditional knowledge for human causes through certain activities such as seminars, workshops, debates, lectures, and exhibitions in which such stories of indigenous traditional knowledge use need to be reflected. Adequate publicity majors need to be taken-up so that people are aware about the use of indigenous traditional knowledge in their daily livelihood.

Indigenous Traditional Knowledge and Digital Library

Library plays a very significant role in acquisition, organization and dissemination of knowledge in any subject. Libraries available in rural areas are the sources of such indigenous traditional knowledge and can act as a key agency in local community for collection, organization and preservation of local culture. It is essential to identify such rural libraries existing in the state and the sources of information available in those libraries. After identifying and collecting such information, the appropriate technology can be used for capturing that knowledge in variety of media such as, audio, video, digitized, electronic database. All such knowledge available in libraries may be digitized in systematic classification, cataloguing and indexing so that effective retrieval can be made. Whenever required retro-conversion of those documents can be done for developing the digitized format. The traditional knowledge digital library developed with the objective to protect the ancient and traditional knowledge of the country form exploitation such as bio-piracy and un-ethical patents. Such system of digital library may be indigenous traditional knowledge system is strengthened which will be ultimately used for sustainable development of people.

Conclusion

Odisha is the land of enriched cultural heritage and traditions. It has a vast reservoir of indigenous knowledge existing in rural society. Indigenous traditional knowledge is the real knowledge exists in people's mind, local society, which is more informal in nature. This sort of knowledge represents the human mind with insight on how a large number of communities manage their livelihoods through an informal knowledge system. In spite of the present modern world the people and knowledge seekers are searching for traditional knowledge to unfurl the mystery of such knowledge system and revive the indigenous traditional knowledge scenario. It is acknowledged fact that the indigenous traditional knowledge system is essential for development for which it is required to prepare documenting such knowledge sources existing and useful for the people at large and develop a documentation centre in a State like Odisha. The responsibility of documentation centre is to identify the

knowledge sources, information sources and acquire the details of each knowledge entity, classify them, prepare metadata, develop databases to preserve those information for further use. The preparation of electronic database of indigenous traditional knowledge is the need of the hour. The collection and storage of indigenous knowledge should be given priority with right dissemination among interesting organizations and individuals. Promotional activities and publicity majors are required to be taken up to promote the use of libraries that appears to be very significant in acquisition, organization, and dissemination of indigenous traditional knowledge related information to the users and the public.

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Chief Minister's Discussion with Union Ministers and Deputy Chairman, Planning Commission at New Delhi

Orissa's Annual Plan Size Fixed at Rs.11,000 Crore Aims at Sustainable Broad Based Inclusive Growth.

In the meeting with Deputy Chairman, Planning Commission at New Delhi held on 20th April, 2010, Hon'ble Chief Minister Shri Naveen Patnaik discussed proposals for Annual Plan : 2010-11 and stated that Orissa has made commendable efforts to improve fiscal health and plan performance and to create investor- friendly environment for attracting private investments. He informed that Orissa's development strategies aim at sustainable broad-based inclusive growth, scaling up investments in agriculture and allied sectors, creating more opportunities for employment and livelihoods for all and particularly for youth, strengthening social security net particularly for people Below Poverty Line and marginalized communities, reducing regional and social disparities, and improving productive infrastructure including **Bijli, Sadak** and **Pani**.

Hon'ble Chief Minister stressed that because of consistent and focused efforts, Orissa was able to achieve an average annual real growth rate of 9.51 per cent during the 10th Plan against the target of 6.20 per cent per annum and aims to maintain the tempo during the 11th Plan period. He highlighted several initiatives undertaken by the State Government to achieve higher broad-based inclusive growth, faster overall development of the people of Orissa and accelerated poverty reduction. He stated that Orissa has taken specific steps to improve the delivery mechanism and outreach of public services resulting in progressively increasing Annual Plan sizes. Orissa has increased its Annual Plan Outlays by more than four times from Rs.2,500 crore in 2004-05 to Rs.11,000 crore in 2010-11.

He endorsed the initiative on right to education and urged Planning Commission to convene a meeting of National Development Council (NDC) as early as possible to discuss and devise modalities for substantial central funding for this rights based human development initiative.

He requested for a special dispensation of Rs.300 crore a year for Orissa portion of Ranchi-Vijayawada Highway till the completion of the project. He further stressed the following issues:

(i) Expeditious approval of an 8-Year Perspective Plan of Rs.4,550 crore for development saturation of the KBK region of Orissa, that has been prepared in consultation with Planning Commission and submitted to them for approval and pending approval of the Perspective Plan, immediate increase in the Special Central Assistance from Rs.130 crore to Rs.500 crore a year for the KBK region for the year 2010-11.

(ii) Appropriate modifications in the guidelines for APDRP-II so that the States like Orissa which have been adversely impacted because of pioneering Power Sector Reforms should also benefit.

(iii) Inclusion of Orissa for implementation of the Central Government initiative for development of pulses and oilseeds.

(iv) Allocation of 500 MW of power from the Central Un-allocated Share and NTPC Kaniha Stage II to Orissa to help address the current power deficit situation in the state.

Hon'ble Deputy Chairman and other Members of the Planning Commission lauded the initiatives and efforts of Orissa Government for achieving significantly higher growth rates and cent percent utilization of Plan funds. They held that some of the initiatives such as System of Rice Intensification (SRI) as undertaken by the State, which aims to increase productivity while lowering costs of production, deserves to be scaled up and replicated by other States. While appreciating significant achievements in almost all sectors, Hon'ble Deputy Chairman / Members of the Planning Commission noted that the State has the potential to further improve by focusing and enhancing its efforts in social sectors. Deputy Chairman, Planning Commission also advised that accomplishments of the State during last five to seven years need to be disseminated to the larger public through awareness drives.

Hon'ble Chief Minister thanked the Planning Commission for supporting Orissa's development efforts and the increased plan size.

Hon'ble Chief Minister, Orissa meets Hon'ble Union Agriculture Minister

In the meeting with Hon'ble Union Minister for Agriculture, Shri Sharad Pawar, at New Delhi held on 21st April 2010, Hon'ble Chief Minister, Orissa, Shri Naveen Patnaik, discussed various issues of concern facing the State.

Hon'ble Chief Minister informed the Union Minister that the State was facing an acute storage constraint on account of inadequate movement of surplus rice by Food Corporation of India (FCI). In addition, he stated that the States' resource capacity to provide relief to the calamity affected population

has been seriously constrained because of non-release of Rs.2687 crore for 2008 floods affected population and Rs.2257 crore sought for 2009 drought/flood affected population under the National Calamity Contingency Fund (NCCF). Hon'ble Chief Minister informed that even the committed amount of Rs.500 crore announced by the Central Govt. for 2008 victims has not been released and that the State has been provided with just about Rs.99 crore.

Chief Minister requested the Union Minister to appreciate the difficulties faced by the State and take urgent action in respect of the following:

- Moving out of the surplus procured rice of about 9 lakh MT to outside the State during next 8 months starting from April 2010 in view of severe storage capacity in the State.
- Release of balance committed amount of about Rs.401 crore under NCCF, committed for 2008 flood victims.
- Consider providing adequate resources under NCCF for 2008 flood affected population (Rs.2687 crore) and for 2009 drought/flood affected population (Rs.2257 crore).
- Sanction additional 25000 households under Antodaya Anna Yojana (AAY) for Kandhamal district.

Hon'ble Union Minister appreciated the concerns of the State and assured that FCI would take necessary measures to move out the surplus rice to ensure that further Rabi procurement does not get hampered in the State. He informed that the matter regarding adequate release of funds under NCCF is under active consideration of the High level Committee headed by the Union Finance Minister. On the issue of additional beneficiaries under AAY, the Union Minister assured to look into the matter favourably.

Hon'ble Chief Minister, Orissa meets Hon'ble Union Rural Development Minister

In the meeting with Dr. C. P. Joshi, Union Minister for Rural Development and Panchayati Raj at New Delhi held on 21st April 2010, Hon'ble Chief Minister, Orissa. Shri Naveen Patnaik, discussed various issues of concern facing the State. He informed that the State has been making concerted efforts to implement all Rural Development Programmes aimed at creating rural infrastructure, generating employment, alleviating poverty and providing basic minimum needs to the people including social security to the vulnerable with the objective to achieve balanced and equitable development of the State.

Hon'ble Chief Minister stated that despite best efforts by the State, performance under some of the rural development programmes has been adversely affected on account of either delay in the release of funds or inadequate releases by Government of India. He brought to the attention of the Union Minister that the State was facing an acute resource crunch under many Central Government programmes including Pradhan Mantri Gram Sadak Yojana (PMGSY), National Rural Employment Guarantee Act (NREGA) and National Rural Drinking Water Programme (NRDWP). He mentioned that there exists a need to review some of the ongoing programmes as these require scaling up or change in norms to achieve optimal results.

The Chief Minister requested the Union Minister to appreciate specific concerns of Orissa and to take urgent action in respect of the following:

- Release of Rs.2,500 crore during 2010-11 under PMGSY and immediate release of Rs.500 crore during April, 2010.
- Revision of project costs for projects sanctioned under PMGSY to account for increase in cost of material etc. over last 10 years.
- Provision of Rs.1,908 crore during 2010-11 under NREGS taking into account the revised wage rate for unskilled labour.
- To double the assistance under Backward Region Grant Fund (BRGF) from existing Rs.20 crore per district to Rs.40 crore.
- Reduction in age limit to 60 years under Indira Gandhi National Old Age Pension (IGNOAP) Scheme and to 18 years under Indira Gandhi National Widow Pension (IGNWP) Scheme along with amending definition of disabled, for wider coverage.
- Sanction at least Rs.400 crore under NRDWP.

Hon'ble Union Minister while appreciating the concerns raised by Hon'ble Chief Minister assured to consider the specific concerns of Orissa. He assured that the central funds will flow fimely to the State as per the norms.

Hon'ble Chief Minister, Orissa meets Hon'ble Union Minister for Road Transport and Highways

In the meeting with Shri Kamal Nath, Hon'ble Union Minister for Road Transport and Highways at New Delhi, held on 23rd April 2010, Hon'ble Chief Minister, Orissa, Shri Naveen Patnaik, discussed various issues of concern facing the State for development of Road infrastructure.

Hon'ble Chief Minister informed the Hon'ble Union Minister that the State has taken all possible measures to develop the road network within the State, for the balanced development of all sectors and for removing regional disparities. He added that adequate funds are being provisioned in the State Budget each year to ensure uninterrupted implementation of various on-going road projects in the State.

Hon'ble Chief Minister stated that despite sincere efforts made by the State during last 5 to 7 years, there still exists large gaps in the road infrastructure, adversely affecting the process of industrialization and development in the State. He added that Left Wing Extremism in certain parts of the State has caused additional requirement of road network requiring substantial resources on priority. Hon'ble Chief Minister accordingly requested Hon'ble Union Minister to consider the following specific requests favourably:

- Sanction Four-laning of National Highway (NH-203) Bhubaneswar-Puri as a Special Project and its completion well before Nabakalebar Utsav to be observed in 2015.
- Sanction pending seven projects of 2009-10 and approve new projects for 2010-11 under the Central Road Fund (CRF).
- Sanction projects under Economic Importance Scheme for Rs.65 crore and projects under Inter State Connectivity Scheme for Rs.100 crore.
- Sanction Rs.425 crore for Vijaywada — Ranchi Corridor in 2010-11.
- Sanction 19 road projects entailing costs of Rs.762 crore to develop State Roads in Left Wing Extremism (LWE) affected districts.
- Construction of additional waterways of 1500 meters on NH-60 to remedy water logging problem.

Hon'ble Union Minister complemented the State Govt. for timely execution of works in the on-going projects and assured that the specific requests made by Hon'ble Chief Minister will be considered most favourably. He agreed that special efforts were required to be made for strengthening Vijaywada — Ranchi Corridor and road networks in Left Wing Extremism (LWE) affected districts. Hon'ble Union Minister recognized the significance of Bhubaneswar-Puri Highway and Nabakalebar Utsav and assured that by May 2010, the process of bidding will be completed. He, however, requested that the State Govt. should hold the meeting of Committee headed by the Chief Secretary urgently to resolve some issues relating to acquisition of land and sign the State Support Agreement early.

Hon'ble Chief Minister, Orissa meets Hon'ble Union Minister for Power

In the meeting with Shri Sushil Kumar Shindhe, Hon'ble Union Minister for Power at New Delhi held on 22nd April 2010, Hon'ble Chief Minister, Orissa, Shri Naveen Patnaik, discussed various issues of concern facing the State in the Power Sector.

Hon'ble Chief Minister informed the Hon'ble Union Minister that Orissa was the first State in the Country to undertake critical reforms in the Power Sector and yet it is experiencing severe shortages in power supply and delays in the execution of works by the Central Public Sector Undertakings (CPSUs). This is adversely affecting the rural electrification programmes and the industrialization process in the State, he added.

Hon'ble Chief Minister stated that instead of rewarding Orissa for its signal contribution to power sector reforms, the on-going Central Programme-Restructured Accelerated Power Development and Reforms Programmes (RAPDRP) has, on the contrary, put Orissa into a disadvantageous position. He informed the Hon'ble Union Minister that the State has some serious concerns about abysmal performance of CPSUs including NTPC Ltd., NHPC Ltd. and Power Grid Corporation of India Ltd. (PGCIL) in implementing Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), considered critical to energise and develop rural Orissa.

Hon'ble Chief Minister impressed upon the Union Minister that some concrete time bound measures require to be taken urgently to remedy the worsening situation. He requested that the Union Power Ministry should undertake the following measures on priority :

- Complete the works in remaining 67% villages and provide complete documentation in respect of 33% villages in Orissa, to achieve the objectives of RGGVY.
- Approve the revised Cost Estimate of Ganjam district to enable coverage of all villages in the district.

- Allocate at least 300 MW of power from the Central unallocated share of the Eastern Region and restore the balance 500 MW of power surrendered by Orissa from its allocated share from NTPC Kaniha Stage II for ensuring uninterrupted power supply in the State.
- Review the Restructured APDRP, as decided 2 years ago, to enable private Power Distribution Companies to avail the assistance aimed at sustained reduction of transmission and distribution losses.

Hon'ble Union Minister complemented Orissa for its sustained efforts and assured the Hon'ble Chief Minister that every effort will be made to address specific concerns of the State. He stated that CPSUs will be directed to complete all programmed villages under RGGVY, within a defined time frame and that efforts will be made to provide additional power supply to Orissa from unallocated Central share to meet the actual requirements of the State.

The Hon'ble Union Minister also informed that Restructured APDRP is scheduled to be reviewed during July, 2010 and efforts will be made to concede to Orissa's request. He also assured that the Central Monitoring Committee will approve the revised cost estimate of Ganjam District very shortly. He advised that the State should ask the Private Distribution Companies to complete inspection and energisation of all completed villages, pending submission of documents by CPSUs, which he assured, will be submitted by them within next 30 days.

Concluding the discussion and assuring the Chief Minister of all possible support, the Union Minister expressed his willingness to consider yet another Ultra Mega Thermal Power Project (UMTPP) for the coastal areas of the State.

Hon'ble Chief Minister, Orissa meets Hon'ble Union Minister for Human Resource Development.

In the meeting with Shri Kapil Sibal, Hon'ble Union Minister for Human Resource Development at New Delhi, held on 11th May 2010, Hon'ble Chief Minister, Orissa, Shri Naveen Patnaik, discussed various issues of concern for the development of 'Human Resource' in the State, particularly in the context of Right of Children to Free and Compulsory Education (RCFCE) Act 2009, Vocational Training and Higher Education.

Hon'ble Chief Minister informed the Hon'ble Union Minister that Orissa, during recent years, has made concerted efforts for improving the educational infrastructure at all levels and for enhancing the technical skills and capabilities of its human resource, with the objective to sustain the development and industrialization process in the State. He appreciated the support extended by the Union Ministry and emphasized that the magnitude of the task faced by the State has suddenly increased manifold

primarily on account of RCFCE Act and the additional requirement of trained and technically qualified manpower necessitated by the on-going industrialization process.

Hon'ble Chief Minister impressed upon the Hon'ble Union Minister that about half of the State is covered by KBK Region and Left Wing Extremism (LWE) affected areas, which have extremely high concentration of the vulnerable population including SCs & STs and the problem is accentuated by the fact that this vulnerable population is dispersed in scattered remote villages. He emphasized that vulnerable population in these areas require some serious special efforts and there is therefore a strong and justified need to treat KBK/LWE area in the State at par with North Eastern States and other Hill States, for the purpose of all Schemes of MHRD.

Hon'ble Chief Minister requested the Hon'ble Union Minister to consider and approve following specific requests of the State, on priority:

- Approve Central-State share in the ratio of 90:10 to implement the Right of Children to Free and Compulsory Education (RCFCE) Act 2009 at least for two plan periods
- Accord 'Special Category Status' for 11 districts included in the KBK region and Left Wing Extremism (LWE) affected Areas for the Schemes of MHRD
- Sanction all 'school buildings' and 'additional class rooms' as per the requirement of RCFCE Act during 2010-11
- Consider allotting 1/3rd Central share as envisaged under the Scheme for new colleges for upgradation of existing colleges in 18 low Gross Enrolment Ratio(GER) districts as part of the Model College Scheme
- Establish a World Class University in Orissa as announced in 2008
- Establish a Regional Centre of Indira Gandhi National Tribal University (IGNTU) at Phulbani
- Provide assistance for upgrading Model Degree Colleges in Districts having low Gross Enrollment Ratio (GER) in higher education
- Sanction new Vocational Junior Colleges and strengthen existing Vocational Colleges

Hon'ble Union Minister appreciated the efforts being made by the State to develop its human resource and for efficiently utilizing the central Govt. funds. He assured that all the issues as brought out by the Hon'ble Chief Minister shall be considered favourably on priority. He informed that the Union Govt. was in the process to finalize the arrangement of sharing of funds required to enforce Right of Children to Free and Compulsory Education (RCFCE) Act 2009 and assured that efforts will be made to minimize the burden on the State. Hon'ble Union Minister informed that the proposal to establish a World class University, now rephrased as 'Innovation University' is under active consideration. He also shared that the proposal of the State to have a Regional Centre has been recommended to the Indira Gandhi National Tribal University. He advised that the State should take advantage of the Central Scheme for setting up new Degree Colleges in 18 Low Gross Enrolment Ratio Districts. For developing

playgrounds, Hon'ble Union Minister appreciated the suggestion of the State and assured to take up the matter with Ministry of Rural Development to include these under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

Hon'ble Chief Minister, Orissa meets Hon'ble Union Minister for Water Resources

In the meeting with Shri Pawan Kumar Bansal, Hon'ble Union Minister for Water Resources at New Delhi, held on 12th May 2010, Hon'ble Chief Minister, Orissa, Shri Naveen Patnaik, discussed various proposals relating to development of water resources in the State.

Hon'ble Chief Minister informed the Hon'ble Union Minister that Orissa, during recent years, has made serious efforts for enhancing the irrigation potential and for controlling floods. He expressed that recurrent floods and drought, occurring in the State almost every year, cause heavy losses and seriously dent the on-going development process. Hon'ble Chief Minister appreciated the support extended by the Union Ministry under various on-going Programs including Accelerated Irrigation Benefit Program (AIBP), Flood Management Program (FMP) and Minor Irrigation Projects (MIP) and stressed that the State needs substantially higher resources for strengthening the irrigation network and flood control measures, to minimize the floods/drought and their impact and considered vital for sustaining high levels of growth.

Hon'ble Chief Minister requested the Hon'ble Union Minister to expedite sanction in respect of the following proposals:

- Sanction on-going Rengali Irrigation Project to increase its irrigation potential from existing 40,000 hectare to 2.33 lakh hectare.
- Sanction 65 new Minor Irrigation Projects (MIPs) under Accelerated Irrigation Benefit Programme (AIBP) during 2010-11.
- Accord Technical clearance for Lift Canal System of Upper Indravati Project and Brahmani Birupa Kelua Doab project pending the environmental clearance by Ministry of Environment and Forests (MOEF).

Hon'ble Union Minister appreciated the progress achieved by the State under the on-going Centrally Sponsored irrigation/flood control programs and assured that the proposals of the State shall be considered and approved, on priority. He advised that the State should take full advantage of the Flood Management Program (FMP) by formulating large project proposals on an integrated basis and make adequate provision in the State Budget during 2010-11, to take up new Minor Irrigation Projects.

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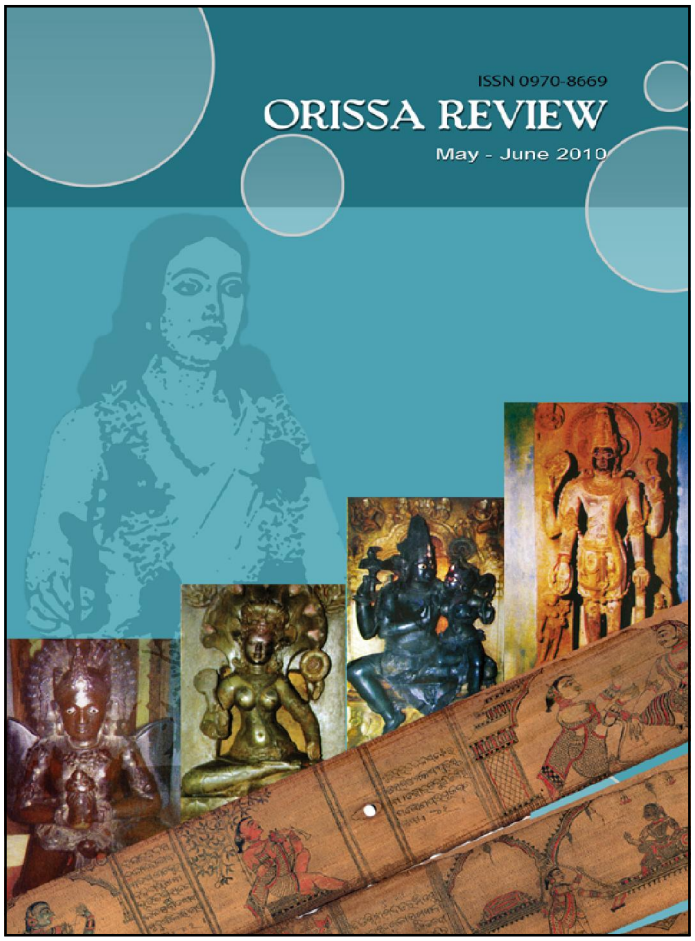

Cover Design :

Images of Garuda at Madhava Temple, Kenduli; Padmavati at Kenduli, Laxmi Narayana at Chaurasi near Madhava village, Madhava (Visnu) at Madhavananda Temple. Palm-leaf Folios of Gita Govinda. Poet Jayadeva in the back-ground.

CONTENTS