

Rajo, The Swing Festival of Kalinga (India)

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Introduction

In this communication we discuss one cultural festival of Oḍiṣā (erstwhile Kalinga heartland) namely the *Rajo* which is ethnic and unique to her[1], We try to evaluate few select aspects *vis-a-vis* the vernacular Luni calendar, which in turn is moored to the Madalā Pānji (Śrī Jagannāth Temple Almanac). Never before to us, was such perspective ever set before the reader(s). The *Rajo* in Oḍiṣā, the eastern province of India is held with full fervor, gaiety by one and all (cross cast-profession spectrum); is even associated with official leave. We use the term Kalinga to establish a mental tele-connection with history and geography as part of our considered view that the term Kalinga is of antiquity and is also associated with variety; researched sparsely; and also because the Hindu lexicons [2] indicate the meaning and scope of the term ‘kalinga’ as ‘cleaver & intelligent\cunning’. It is possible that a cleaver society may have (i) intelligent reasons to have a exclusive swing festival for explicit reasons and/or for exclusive sub-populations (ii) reasons to have public display (iii) hence may have it preserved in archaeology (apart from oral & literary traditions), which has not been brought to light. The Kalinga(s) abounds in archaeological remains.

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Fig.1 A *Rajo doli*, in full play motion, U-Tube-WWW with thanks. Shows 3 girls in one sledge. The standing figure is providing the *pengā*. Behind is the gate of a Govt. residential quarter.

The *Rajo* (menstruation) is a three day deemed ‘menstrual period’ for the mother earth. It is a date in the solar calendar coincident with Gemini asterism (*mithūna*).

Astronomically, in relation to the geo-space of $17^{\circ} 49'$ to $22^{\circ} 34'$ N and $81^{\circ} 29'$ to $87^{\circ} 29'$ E (Oḍiṣā), the Gemini asterism and the Sun get co-incident annually. It heralds the *Rajo*. The 1st day of observance is known

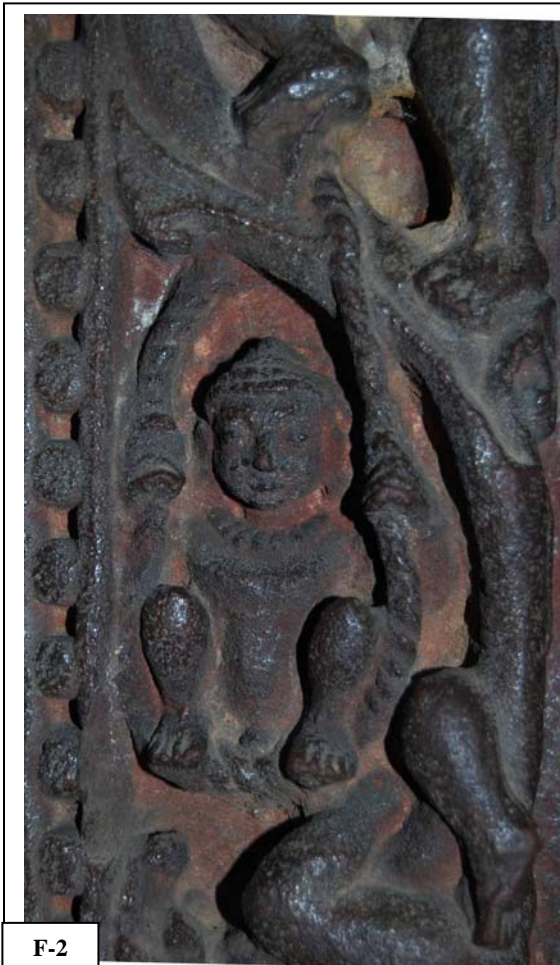
as *Paheli Rajo* (1st menstruation-biological view point- terrestrial *locus*) and whereas, it is the day of 1st contact of the ecliptic (Sun) with Gemini asterism in the night sky. The 2nd day is *Sanṅkānti* (full contact), and is the main day of the swing festival of the three day celebrations. The term *mithūna* means courtship/love making/coitus. During this period all farm implements are put aside or are offered on worship and no earth related activity is done, women do not cook, they put on new dress and take to the swing (3 days). *Śesa Rajo* is last contact of the asterism. From astro-climatologic angle *Rajo* marks the beginning of the wet season (pre-Monsoon along the eastern shore board of the Indian peninsula). On such date, meteorologically, the country side is breezeless, cloud covered, hot and moist (semi-entropy like condition). Sweat and body odor are very conspicuous. A swing provides great relief by increasing the evapo-transpiration from the body resulting in drive away of unearned fatigue.

In historical Kalinga-Ūtkala-Oḍra-Oḍiśā-et.al., (various synonyms) since c.11th A.D., there is current a very ultra wide cum deep consciousness about Śri Viśnū-Śri-Kriśna. And whereas, in the same country the *tithi* (annual date) of the Full moon of the Spring Equinox is called “*Dola Poornimā*” (swing-full moon). A *tithi*, whence all the Hindu deities (*vaiśnava* in particular) in temples; monasteries; or in private houses and even demised and living divine personalities (alike *Śāi Bābā*) are put on and/or are envisaged on swings. The *Dola Poornimā* is a religion related cultural practice. *Śiddhāntically* (astronomically) to the naked eye, the full moon of the *Dola Poornimā* seem to be visually aligned with the 20⁰N latitude (runs though the mid of Oḍiśā), and often at *perigee* cum *syzygy*. Post this *tithi*, every selenic phase seem to experience swing (even extreme swings) in trajectory in relation to +20⁰ Latitude. This has thrown asunder the attempted selenic-trajectory pre-calculations by the ancient Hindu astronomers (known as *śiddhāntims*) and saints (*Riśis*) about the (would be) trajectory. They failed inspite of being the brightest mathematician / astronomers on cognate period basis - globally. They have therefore (almost in unison including the *Jagatguroo* Adi Sankaracharya), ended up comparing the moon’s trajectory with that of the ‘mind and/or attitude of a damsel’ ! Meteorologically, for the human mind-body a invigorating salubrious sea breeze of the order 10-30knots picks up to stay put for a month or more all along the eastern sea board of India (Kalinga in particular). Colloquially it is known as *Caity pabana* (gaiety breezy), and as *chaitra māsa* (gaiety month) on the Hindu luni calendar, respectively. We cannot discount such discussion.

Whereas, post *Rajo*, all types of farming activity starts. We know, Oḍiśā depends on rain fed sustenance type agriculture (mono crop). Agriculture provides employment, food and hence *Rajo* is a social festival (*śāmājik ūtsav* i.e., social function) that has a strong component of applied

tradition (*vyāvahārik pṛathā*) which invites the next (bountyfull) cropping season. Therefore, *Rajo* is also a festival of the women of the farming communities. It comes approximately 45 days before *khudūrkuni ośā* and 60 days pre *Ganeśa vṛata*. The Mādālā Pañji is the temple ephemeris of Sri Jagaṇnāth Dhām (heritage zone). It is based on the lunar cycle(s). Almost all *ādivāsis* (original inhabitants) of India follow the solar calendar (supporting information). *Rajo* too is entirely moored to the solar calendar. Is observed mostly by the female folks. Is not observed inside any of the great shrines of Oḍiśā. So, the *Rajo* can be argued as to be older to or independent off the ephemeris traditions and practices of that great Hindu temple genic culture/practices(*note-i*). The term *Sanḅkrānti* literary and technically means (being collinear with the ecliptic). It is a Sanskrit technical phone. *Rajo* is a Prākṛit phone comprised of only two consonants of the Oḍiyā vernacular as alike in Prākṛit. The Oḍiyā *lingua* of the commoner and that of the dictionary are embellished with phones comprised of two consonants and/or more(*note-ii*). Vowels being conspicuous by absence (as in Prākṛit & Pāli). The term *prākṛit* means ‘natural-naturale’ and tacitly connotes ‘*palli*’ i.e. rural. Kalinga was ‘*mlechha deśa*’, i.e., a country of non-Sanskrit speech [3,4]. So Prākṛit & Pāli was the main stay (see author’s various publications). This suggests two-way assimilation cum up-take between Brāhṁanic and non-Brāhṁanic ways and means, by & by. The *Rajo* to our mind is a candidate which has undergone such assimilation/cross cast uptake mechanics.

India has numerous swing festivals in her regional cultures. In her well-to-do homes (afghan/mughal/christian included) in the rural/urban locations the swing is part of the furniture. However, it is conspicuous by absence among the Buddhists of all orders. Among the poor and the displaced (due to urbanization / developmental processes) the swing takes the shape of a ‘U’ shaped hammock, slung from tree-branch or from any rafter available any where. It is alike a pendulum. This unique ‘U’ shape configuration is got by tying the two ends of the *sāree* alias ‘wrapper’, which is a unique stitch less female mono wear. In it, the infant/child gets the feel of the mother’s lap and sleeps and lies still, with the gentle swing. It is relevant to relate that almost the entire stock of able bodied ladies of the Indian farming community seasonally go out to the field to work in roster (some works viz. rice-sapling transplantation being specially done by them). Interestingly, such *sāree* make hammock (from its locus from under the cool-dense shade of the tropical flora) goes indoor during monsoon and virtually vanishes during the winter. Again, from another perspective, in some regions such as the Ganga-Jamuna river valley-plains, almost in all cases, the swing is associated with Lord *Śri Kṛiśna* and/or with *Śri Rādhā* et.al., [*Rādhā*= peerless tip-toe ?] and or with harvest or whiling (time pass) or relaxing. In the Hindi speaking belt of India, the groom is referred to as *Dulhā* (swing inducer) and the bride to as *Dulhan* (swinger). Stemmatics suggest that either have their stems in



F-2



F-3

the parent phone ‘*doli*’ (palanquin/swing). *Dulhā* is a phone of masculine gender, while *dulhaṇ* is of feminine gender. Phonetically either form a compatible pair that deliver onto the user and hearer a soft-supple-feel of a would be couple (nuptial engagement). In Bengal, the said device is termed as *Dolnā* (an abstract verb of present continuous usage; neither masculine nor feminine). So, if we change our perspective the transpiration alters. So also if we change geographical locations (within India) the perspective changes. In the Indian panoramic view the swing is an ubiquitous member to the non-discerning eye. Often, a dirty device of time pass; of vacant mind and or lassitude. To the discerning, it is talkative.

The swing is shown in few murals in the temple art of Oḍiṣā dated to between c.9th – 15th A.D., which bespeaks of the involvement of the commoner, the divinity and the royalty. Fig-2 is from the *bāma dvāra baṇḍha* (left door sill) of Śrī Mukteśwar (correct name being Siddheśwar) [5]. The door sill has an upward creeping flora, at every bend of which is shown a *śevāit* (servitor) of certain *niyoga* (guild) signaling his service trait. The creeper is imaginary *kriyā-kalpa-latā*[6] that is symbolic of the various types of services / guilds starting with youths and terminating with *vaya-br̥dha jaṭā dhārees* (old aged having matted locks) and *pujā-viśeka*; et.al. Here we can see a grown up man, having *jāṭā* (matted locks), mustache and a pair of *hāra* (necklace), sitting on a rope-swing (a type~very popular in the local country side). This posture in the locale is

called *peṅgā* (ping). It is a mode of doing sit-ups while on a swing. The sit-ups provide the driver potential for the swing device to pick up speed ~ large oscillation. The artifact is made of fine grained deep red type sand stone of the *Rāni-pathara* (red stone) of the Aṭhagaḍa series. This artifact is dated to between c.800-899 A.D.; size being miniature.

Fig-3 is that of the world famous Mukeśṭvar toraṅa (arch) located affront the shrine in the inner of which we note Fig.2 (the visible door frame is that of the *jagamohana*. Beyond is another door way leading to the *garva grihā*/womb room on which is drawn Fig-2). The actual name of the shrine is Śiddheśvar (the ASI had misnamed it). This is a *Makara toraṅa* (reptilian arch) has slots for setting up the royal swing and for (*maśāla*) flaming torches. The indentures are that of secular (non-religious) and is clearly associated with dance/drama and public enactment of entertainment shows.



F-4

The royalty as the chief patron (possibly) used to sit in the swing and enjoy the performing arts. It is an engineering marvel apart from being an architectural one. The faces (inscribed within a suggestive lunar ring) are that of juvenile male and a mid aged lady (mother Kolāvati & her prince son Ūdyot Keśari *alias* Enterprising Lion ~a metaphor). Is made of fine grained rich orange-brown type Rāni pathara. Globally peerless.



F- 5

Fig.-4 is that of *Makara toraṇa* located at *Teeni-mūṇḍiā* junction on the Baḍa danḍa (big thoroughfare) at Bhubaneswar. Here we note the faces are that of a male and a female (king & queen, inscribed in characteristic *śomavaṇṣi* full-moon medallion form as in Fig.-3. Hook type appendages are there for affixing a swing. The art indentures differ much, although few common items alike *rudrākṣa māla* (garland of aeleo carpus genitrus); *aṅga śikhara* (symbolic appended spires-as if this too is an apex temple); *muktāvali* (pearl necklace – signifying royalty) are noted. The apex members are that of a

Pūrṇa kūmbha (full pot) atop a pagoda type shrine being ferried by *aṣṭakeśaris* (lion-octane), who all are straining towards as many direction, conjointly signifies *Dharmappravartana* (faith propagation) aspect, and a pair of *Thoṇṭa modā mayūra* (nape twisted peacock). It represents the demise of Maūrya dynasty that used to provide state patronage to Buddhism and used to call it *Dharma* (the faith). Below it is a *Kirtimūkha* (builder's face); and an elaborate *nāga siṅkūli* (snake chain) terminating on either side as the Nāga King & Queen. It signifies the intimate association of all the *śaivas*, as because Nāga *gotra* (mega group) formed (yet forms) the largest segment of the *gotra* based sub-population among the Hindus. The whole style is that of late c.10th A.D. The *haṅṣa dhāḍi* (swan procession) is very rare & significant. They theriopomorphically represent the scholars (*Brahmanas*) who all are oriented towards the state/political head (who would sit on a swing under the arch). The *haṅṣa dhāḍi* symbolizes fillip to *Brahmanatva*. Our considered view is that this arch is the contribution of the mighty *Māhāśivagupta Dharmaratha* (c.960-995 A.D.) *alias* Paraśūrām of the Śomavaṇṣi dynasty; who was

also a darling of the Brahmins [7]. Moreover, it is located in the vicinity of the Brahmana sāhi (scholar's settlement); and an erstwhile *Tantra māṇḍira* (esoteric shrine – seen as the back drop); others. So, the royal pair would sit in a swing and enjoy the *Ratha yātra* (car festival) of Mahaprvo Śrī Liṅgarāj as he astride his giant wooden chariot annually passes by in his Tripurāṅṭaka rūpa (victor of the three worlds) on *Asoka-Aṣṭami tithi* (April-8th Waxing phase) and also play Holi (festival of colours) along with the servitors guilds on Dola poornimā. *Asoka-Aṣṭami* is also considered as the coronation day of emperor Asoka the *maurya* and/or his birth day (made more popular during Harsha Vardhan's period, c.7th A.D.). Celebrating a *Ratha yātra* in *Tripurāṅṭaka rūpa* alludes to resurgence of Brahmanic scholarship and hence is the anti-thesis to concept of state sponsorship to the Buddhist order (to Avadāna scholarship). It may be noted that the term 'Brahmana' means 'scholar'. The rich tone is topically applied – terracotta. There has been significant amount of earth work done, hence the height of the *bedi* has got lowered. Apart art, between Fig-3 & 4 the architecture and engineering also differ much.



Fig.-5 is that of another select specimen of *Makara toraṇa*; is built on a high podium (7-8 feet above erstwhile ground level); is also the biggest (H15'xW8'). It is located in Tala Bazār at Old Bhubaneswar, and is popularly known as *Dola Bedi* (swing podium). Lord Śrī Liṅgarāj's (indication royale) brass make *calaṅti pratimā* (mobile image) comes to this podium on the occasion of Dola Poornimā. A swing is set up and rituals are conducted. We may note that it has large solar devices emblazoned on it. It may allude to Śuryavaṅsi patronage (c.14-15th A.D.). It has no royal insignia on it. It is a podium exclusively for religious rituals. This device is experiencing encroachment and dilapidation of serious nature. *Dola ūtsav* at this site as yet remains a state

sponsored function.



Fig.-7 is that of another *toraṇa* erected affront a Śiva temple and it

Fig.-6 faces Fig.-5 (opposite located). This *toraṇa* has a pair of bust of crowned Lions with frowning countenances atop, as the crowning members. It represents the *Narasimha* (lion among men) aspect i.e., the then state's insignia. The term '*narasimha*' is a popular respectful metaphor denoting the *kaliṅgiya* sovereign. This is the *dola bedi* of the royalty. They would sit here and observe the festivities (including onset of *Ratha Yātra*). This is a secular structure. This too has solar devices and can tentatively be grouped with the *datum* of Fig.5. This Śiva shrine is very rare as it faces north towards star Kratū / Dhūbe (*Cintāmani* i.e., boon bestower aspect). Normally, the state/sovereign has historically been the boon bestower (in all places in all times). So the *Dola Bedi* as in Fig.5 is that of the divinity and the *Dola Bedi* as in Fig.6 is that of the political head. Fig-7 is that of specimen from the outskirts of a village at the south-eastern fringe of the Chilikā lake (near Palur canal), in the district of Gaṅjām. We can see that it is quite away from any tenements. Numerous villages have similar *Dola Bedis* located in the central business district of the village (specially if it be a fully Brahmin village known as *Śāsani Brahmana Gaon* (administering scholar's settlement). Fig.-2 is that of *Makara toraṇa* located in an ampi-theatre. Fig.3-7 are select members of *Makara toraṇa(s)* having high alter type *vedis* (podiums). All in *mūtāngana* (open air), for *śarvaśādārana* (public purposes). All, swing fit. In the case of the ampi-theater the swing, the occupants in the swing and the artist/performers all would be in the well of the theater, while the viewers would all be on high ground only on three sides. In the case of the high-alter

devices the scheme is reversed. So, a see-saw happened historically between c.9th-16th A.D., in the design and engineering of the base structures. The swing remained.



F-8 : is that of Emperor Narasimha Dev I, National Museum, New Delhi. Non boulevard type. Swing throne under Makara toraṇa. Jalsā is on.

Fig.-8 is that of an artifact from the archaeological gallery of the National Museum, New Delhi. It shows the youth emperor sitting in āḍapa (pomp) in lalitāsana (lovely posture) on a swing throne under a piḍhā chatri (stepped canopy) in court with plethora of courtiers, with a wide blade large bare sword laid across his lap, in right order. The citra kathā (hieroglyphics) is quite eloquent that (i) power/stability grows out from the blade of the sword (ii) this young emperor is ever-ready to join battle (iii) he was left hemispheric

(right handed/normal). This apex person is a samarthā (capable). Faith based stability harbingers a swing-full life. Across Kalinga are dola bedis (swing podium), which all are associated with (similar) mobile thrones (specimen, F-8). Noteworthy are the look-out lions and the centrally placed purna kumbha as the crowning insignias. The snarling, ready-to-jab leos are adult male, and represent the narasimha aspect of Kalinga cinta-o-cetanā (thought & consciousness).

The mayura (*pavo cristatus*) is abundantly available even in numerous tracts of Odisha. Even a large district is called Mayurbhanja (peacock-dispellers i.e., anti-maurya). The term 'bhanja' is a rare indigenous oḍiā acronym. Interestingly, since the battle of Dhauli the mayura art was never appended to anything that was associated with apex royalty and/or divinity (pre c.1560). In this study we shall see later that it is the parakeet (ring necked, *psittacula kramer*) and not the peacock that was associated with Kalingiya rāj dutta kirtis. The *pavo* is a hunter. The *psittacula* is a love bird. The purna kumbha denotes fulsomeness



F-9 : Throne's canopy. Is piḍha (stepped) roof, tri-ratha, purna kumbha protected by jhapāṭ kesari (jabbing snarling Lions) pair. Below is the makara-toṛaṇa (reptilian arch), triple parabola are indigenous to kalingiya school of architecture. Pan-globally, peerless on datum (mono arch at Siddhesvara, see www Rajo Doli).

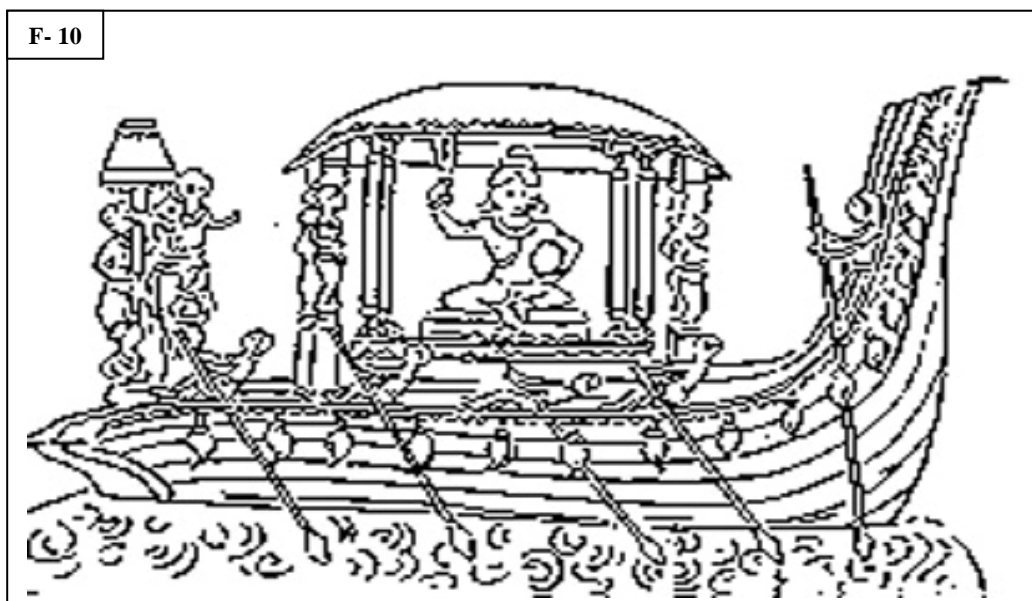
in the domain of this sovereign. The piḍhā chatrī is beautifully scaled suggestive of stones/tiles. It is also suggestive of deula (abode), of mukhasālā (front porch) cum vazramastaka (thundering head) in tri-ratha saili (tripartite style). It rests on khambas (pillars) that taper in ballooning fashion, while spreading out at the top. Angled pilasters calls for mathematico-engineering calculations in load transfer to attain structural stability. To its front is the typical double stepped makara-toṛaṇa (reptilian arch) comprised of parabola triplets. Only of modern learning we (now) know that such design transposes the horizontal component of the thrust on the pillars efficiently (a) partly on to the pillars (b) cancels partly at apex (c) elongates the vectored path (d) while a significant component is transposed/slung into the free atmosphere. In the top-centre is an ṭhikiri (diamond). It signifies the status of the throne and its occupant. The chatrī and the toṛaṇa have tapering, segmented, rotundus khambas (khambas are tapering and hexagonal). The emperor sits on a mattress the corner of which dangles out in front suggesting it to be expensive and flowing (this type also has its forerunner in the art of Śrī Liṅgarāj temple, c.1010-1030A.D). It too is a style statement. He has an enticing physique. His ornaments are unique, novel, native yet leave lot much of his youthful body bare. Even his balā (shin ornament) is effusive about being mañi-rāndita (jewel beset) with tri-ratna (tri-jems). Its design has similarity with that of Simba flower (*Dolichos lablab*) that has close call with the clitoris. Intake imparts excellent vaginal tone

and clitoral tenor (historical-cultural medicinal food. Simba is also anti-leprosy). In Oḍiṣā even to this date, khaṇḍāits are also considered as ‘qualified’ and hence wear the ‘pavita’ (knowledgeable person’s appendage). Śrī Nrasimha too wears a tri-stringed pavitā. It denotes vidyādhara aspect i.e., repository of societal intellectual property. Brahmins wear 6+3 strings [8]. His mañi mekhalā (jeweled waist girdle) has triple rows. His lower garment is body hugging with delicate fine embroidery. His swing-seat is footed and is raised by iron chains. The swing being induced by gorgeous damsels from either side. His eminence is further suggested on to the beholder by the upwardly billowing Field Marshal’s drapery and the balā (as in other icons of Koṅāarak). Discussing iconology of Śūrya (Sun) the immortal J. N. Bannerjee [9] has suggested that ‘uḍikā’ means in-flight attire. Swinging is flight like motion. Narasimha is tacitly alluded to as Śūrya (who is also the presiding deity of Konarak). This is 2-in-1 aspect. His mother, Śusree Kasturi Devi is possibly the corner crowned face to the viewer’s right (elderly countenance). To his hind are a male valet and a sevāit (male attendant). Ladies out-number. At his feat are attractive ladies of his hārem (bird cage) who are playing various musical instruments and also have the cāmara (sable hair breezer). A lady is fondly caressing his dangled out feet. A jalsā (musical soiree) is in progress. All this in Urdu can be intoned as diwan-e-khās (special audience). In the museum nationale, there are other variants of thrones. A throne with a swing is a great idea and a gem of an engineering. Pan globally, singular on datum.

Whereas, the Gaṅga specimen (F-8) presents wide arches, more spaces, a shift from compaction to free spaces; from circular to polygonal roof styles and load distribution methods including angled stilts (as in present day ultra modern front façade designs of multi storied commercially designed structures), resulting in ‘space engineering’ with more of ‘air/head space’. The angled stilts also suggests ‘suspension’ of the load in air (as in advanced design engineering). The interlocking iron chain is uncinated adjacent to the point where the curved bridge (load) lands on the inclined pillar (inset, F-8). The chain is loaded. The seat provides the lowest point of the centre of gravity. This offsets some of the load and forms a supplementary stay. This additionally leads to structural stability. It reminiscences the mechanics of the modern slung bridge designs (Golden Gate/Rabindra/ Vidyasagar bridges), while the swing teases the mind with lessons in ‘simple harmonic motion’. The structures are also set in a kaleidoscopic manner accentuated by 3D bold, in-motion presentation. There is so much more than that meets the eye. It may suffice to say, that, in the company of concomittal damsels the swing selectively relaxes the mind and many an involuntary youthful muscles. The appendages leap to the fore as talkative vital components. The contents of these motifs, their placements jointly and severally impart rare articulation with perfect brevity. To the indulgent they signal victory and sound security. Such ethos is unputdownable. Studying and correlating them have provided years of unbounded joy. Conclusion is pectoris to pen.

We go back. The traditions and practices relating to *Rajo doli* (menstrual swing) is pre-cultivation, pre-tilling and is basically a female gender centric festival. A festival of the masses and the ordinary. Whereas, our cited members of the archaeology of *dola vedis* are that of the divinity and the royalty. The art indentures are *nidarsana mūlaka* (suggestive) and

include signs, signatures and devices of various sects, orders, servitors, dynasties and about the proper patron. Nothing is noted about Śrī Ganeśa. In the very same Kaliṅga, My Lord Ganeśa (the man-tusker therianthropomorphic icon) is seen holding paddy (*dhāna beni*) in the temple art dated to between c.650 - 1050 A.D., and in her vernacular (*Oḍiyā*) literature of between c.16th-20th, is indicated as (choice) boon-bestower. Both Śrī Gajapati & Śrī Ganeśa in public are known as *Gajarāja* (tusker-lord). Yet My Lord Ganeśa does not take to the swing. The *doli* is feminine. My Lord Śrī Ganeśa in Kaliṅga was a generalissimo (*nāyaka*) and the (composite) iconic representation (in therianthropomorphic form of later period c.15-16th A.D.) of the super sovereign *Gajapati*. Hence, (possible-theory) Generalissimo Śrī Māhāvināyak (Great extraordinary leader) kept self off the swing and in turn the artisan refrained from depicting him in/on or around a swing, in the historical art of Kaliṅga of all periods. In our *desideratum* [10] we have further averred that Śrī Ganeśa in Oḍiśā was the lord of the *Khaṇḍāits* (filial swords men↔native martial class). Belligerent and recalcitrant as were the *vināyakas* (sentinels)-so too be the *Khaṇḍāits* till date- were an independent lot, who (either – *vinayakas* of the past & *Khaṇḍāits* of the present) however, love/d and respect/ed benign *pratipālakas* (overlords / maintainers) and propitiation (*jācibā*). World over, in all civilisations past, and societies present, a sentinel never takes to the swing. ‘He stand/sits either at ease or in attention or in shoulder-arms’. So too, in ‘*kaliṅga-oḍra dese ca Oḍiśā; ...iti Māhāvināyak kathā*’. So, when decked up, the swing gets to be associated with VIPs, otherwise is at ease, as pedant. Is never associated with sentries & sentinels. Ever present. In which land did the swing germinate ? Surely, multi lateral cum multi-disciplinary research is warranted.



At Śrī Gajannāth Temple, on the *Kūruma Beḍā* [11,12] (turtle limit/fortification-*note-iii*), beside the eastern gate (to viewer's right) we can see the mighty Kaliṅgiya sovereign on a swing which is slung from a

canopy which in turn is fixed on a raised pedestal on a large ship which is in sailing mode. Fig-108 is a hand drawn sketch (Cameras and every other form of optical/electronic recording instruments/devices are prohibited). The precinct is also out of bounds for non Hindus. The canopy rests on 4 ornate pillars sculptured in the form of young female-facing the seat. There are few more females standing towards the stern (each holding either an item of service or in reverent pose). We can see Śri Gajapati (Lord of Tuskers) is sitting under a canopy on a swing (flat base) that is pendulumed from the four corners by long (top tapering) indentures that have rings and hooks at either end to enable disbanding and re-fixing. The combination of ring ↔ hook & solid bar type pendulums (also) allow induction of mini swings in all the axis. This allows the platform to remain horizontal. Why ? Because, swings when permitted (free play) in all axis leads to cancellation of generation of swings of wide pitch (long wave length). Induction of forces by the roll & pitch of the floatsam gets fractionated = cancellation (at joint/hook points). It permits easy sitting posture and also down turns nausea/sea sickness. Two vessels have been jointed to make a large barge. The emperor is facing the Star Board side *alias* 'Senior side' and five oars men are visible of which four are in full flexed state; each holding long oars. The fifth stands at ease at the bow. He could be a 'step-in', for any human or technical exigency. The vessel seems to be made of rows of planks. The stern is very smart as alike in modern (navy) frigates. They have a vertices. The top side being horizontal and the bottom side being angled at about 30-45⁰ to the horizontal (towards water surface~visual assessment). The bow rises vertically upwards with a prominent bulge. The bulge is the point /locus where the forward thrust peaks and also meets the opposing force (waves/water). Therefore, enlargement of surface is called for, which is effectively provided by the curvature. Why ? The (dormant) energy in the waves that splash on to the bow (as the vessel fjords forward) become kinetic (active). Such opposing kinetic force is played out on the larger surface (thinning of water leads to fractionation and dissipation of the wave inflicted thrust/energy). The adsorbed component of the thrust/energy is then efficiently countered by the lines of forces (from the stern towards the bow) arising out of velocity. The bow is the locus of meeting of the opposing forces (in a moving vessel in any given fluid field). The higher is the specific gravity of the fluid field and or the heavier is the laden load (dead weight ~ represented as 'DWT' in modern times. T= tonnage) the curvature/surface area of the bow will be commensurately larger. The opposing forces (are then) jointly and efficiently vectored towards the tip of the bow; some of it dissipating into the air from the tip (enstrophy point). Enstrophy imparts lift. Frontal lift results in higher speed. High-cum-wide bow is an energy vectoring/cancellation design. This adds buoyancy to the front segment of the ship, resulting in lift tendency and greater efficiency in displacement. In Fig-8 the bow is high as alike in modern day cargo vessels/oil tankers\air craft carriers of ultra heavy 'Dead Weight'. Such high bow would also have assisted entrapment of breeze and consequently in the genesis of driver potential (generating at the bow sans addition of any dead weight). In other words, such design allow conversion of wind energy into acceleration/automation. The 30-45⁰ angulation of the stern helps in its jutting out – hovering over the float media. Inertia loads the vertices (tip) of the stern with part of the deflected weight of the vessel, which due design function is consequently transposed in an angled form onto the fluid body and acts as an lever (Class-III type) and as an angled thrust collinear to the direction of displacement of the vessel. It too is preferred design.

Regarding Star Board side, we may quote 'Wikipedia', as follows. "The starboard side of most naval vessels the world over is designated as the "senior" side. The officer's gangway or sea ladder is shipped on this side and this side of the quarterdeck is reserved for the captain. The flag or pennant of the ship's captain or senior officer in command is generally hoist on the starboard yard. Nocturnally it is also marked by 'Red light' [13,14].



F- 11

On its abacus (Fig-10) are drawn wave like design. The barge is evidently in 'fast-forward' motion, which is why, the emperor with his right arm has to hold on to a strap that is slung from the roof (on the opposite side of the motion/due inertia). On the sides of the barge are shown a line of designer buffers that allow smooth/crash less docking. The emperor strikes *lalitāsana* (beautiful/lovely pose), with left hand in *kaṭi haṣṭa bhaṅgi* (hand on hip) and with the right arm he grips the strip. The Hindu literature (specially the regional recessions) talk much about *jala-kiṭā* (water sports) and about *naū-vāṇijya* (maritime trade). The designer buffers

also prompt the beholder to think of 'royal barge'. *Inter-alai* in relation to our topic and model which means, the sculpture represents the average of some regular or that of a very special event. In relation to the presence of ladies on a fast-forward royal barge decorated by the presence of an emperor of and in a maritime power/state, we may profit to relate that historians tell us that when Julius Caesar had marched onto Cleopatra's Egypt, she had welcomed/met the conqueror, coming in on a royal barge piloted/deck managed by ladies. So ladies on a royal barge is no new thing. The swing seems to be unique.

The term *Rajo* is a metaphor. One of the underlying ethos (so far not discussed by any scholar) is that a ship swings on the water surface, and in turn induces motion onto the swing *doli via* a delayed action mechanism. The flotilla and the swing oscillate variably across the imaginary line drawn from bow-to-stern. So, to the person perched on a 'fast-forward' floatsam can be unsettling. When on a swing all this gets negated and also it is a matter of show business. Our considered view is that Śri Gajapati the Supreme commander is so relaxed because of his naval might and able mariners ! (?). Hence, in modern times 'Fleet Review' is only done by the Supreme Commander of a Maritime Super Powers i.e., a Blue Sea Navy. This mural (F-10) also embeds useful lessons of Physics pertaining to simple harmonic motion(s). A well loaded large swing on a ship deck will also tend to cancel roll (side to side undulating motion of the vessel, which induces sea sickness)

and in turn impart stability to the floats as well, precisely due to delayed action mechanism allowing smooth sailing [15].

Beside the emperor is a banner. It is not a *Chattā* (umbrella) as is associated with peace time institutions; enterprises; *Jani & Jatras* (sojourns & fairs) of the Gajapati and the Holy Trinity at Śri Khetra Pūri and with Tripurāṅṭaka Māhādev Śri Liṅgarāj as at Bhubaneswar. It is that of a *Thāṭṭa* [16] (Regiment). Historically, sans variation, the *Chattā* either have flat or parabolic top architecture (they are plentifully depicted in the stone art of Oḍiśā from onwards c.650 A.D. ~ and not the type as in Fig-8 & 9). In Fig.-11 we see stepped parallelogram type (inverted 'U'). These types even to this day are associated with the various *jāgā gharas* (watch & ward houses). The *jāgās* are erstwhile regimental centers and till day (at Pūri *alias Śri Khetra*) preserve and practice martial arts as their sole games. Each *jāgā* has a unique banner, having unique colours, which all morphologically are identical to that of the standard depicted in Fig-10 & 11. The *jāgā(s)* revere each and every standard profoundly, while take immense pride in that which is their own (alike modern day regimental affinity). Hence, our Fig.-9 are that of regimental banner(s) being carried in an army column. This artifact is displayed (in the out) in the Oḍiśā State Museum, Bhubaneswar, and is variously dated to between the period c.1000 – 1400 A.D. The artifact is not an import. Alike our other specimens it is a native member. We are of the considered view that the device beside the emperor on the royal barge (F-8) is that of an standard of an erstwhile naval command ! On board is the supreme commander majestically conducting a Fleet Review (from Star Board side). Therefore, this artifact (because of its internal value) has been selected for conservation at one of the most secured Hindu heritage site namely Śri *Maṇḍira* (a perspective), and given prime placement. The *Bhoga maṇḍapa* has an lower date of c.14th A.D., and upper dt. of c. 15th A.D. It is another engineering marvel (separate communication). This mural is part of mankind's heritage. To the beholder it provides a *samūcita drisya* (composite pictograph i.e., has numerous sub-themes) with an unique window into the levels of maritime science in India - *datum* basis. Let us visit it. Alike our other specimens it is eloquent to the indulgent, more to the diligent, and most to the informed. A soft copy of this article is also available on the WWW[17].

We have discussed all these (seemingly) disparate aspects in relation to *Rajo* in order to arm the reader with a *samūcita drisya* (composite picture) in tune with age old universal practice of *citra kathā* (story telling via hieroglyphics), in our attempt to drive home the point that *rajo* does not stand in isolation. It stands tall in a swing-full society. Such perspective and model of ours will help the scholars to research the topic further. Meanwhile, let us salute the conservatives who endeavored to preserve. But for them we would have been at loss.

South East Asian Review

http://www.southeastasianreview.com/Rajo_Swing_Festival_Kalinga_India.pdf

www.southeastasianreview.com/giantswing.ppt (adv. Web Published)

Notes

note – i - The Madala Panji (resonating ephemeris) is overall in tune with pan-indian ephemeris. It is a pair of Odiya phone, *Madala* being of prakrit etiology. Panji is a all-india usage.

note – ii – Meaningful *prakrit* phones comprised only of consonants (apart *Odiya* dialect & script) are also noted in profuse use among the *Singhalese* (leonids) of *khandait* pedigree, who in general seem to be the ruling class and occupy almost all the ecclesiastical ranks of the Buddhist order in that (lovely) Island nation. Points in the direction of being erstwhile *kalingiyas*.

note – iii – Even the nebulous poet Gunadhya (author of *Vrata Katha* comprised of 100,000 couplets in Non Sanskrit /later on Sanskrit (?) – “The story of the Vow”; c.1st B.C.), in his prelude/introduction mentions his *Pratipalak* (political patron) as King Kalinga Sena and Queen Padmavati. The bench mark of 100,000 couplet work remains unsurpassed till date. Further, all dynasties of all the Rajgirs of present day Odisha and erstwhile Kalinga/Utkala/Odra/Tosala, etc., have numerous female members named ‘*padmavati*’. Alike the term *padmavati*, the composite phone Kalinga Sena too is a metaphor. It is a tradition. Alike the swish of the swing (?).

Reference

1. D. Patnaik, *Festivals of Orissa*, 1982, Bhubaneswar, pp. 37-38.
2. V. S. Apte's, *The Practical Sanskrit English Dictionary*, Ed. By Gode & Karve, Prasad Prakashan, Poona, 1957, vol.I, p. 547.
3. C. R. Das, *A Glimpse into Oriya Literature*, Orissa Sahitya Academi, 1982, pp.10-12.
4. A. Parasher, *Mlecchas in Early India – upto 600 AD* (Full Book), Munshiram-Manoharlal, Delhi 1991.
5. Shown to author by *sevait Sri* Manoj Kumar Battu. Thank you Manoj.
6. *kriyā-kalpa-latā* (service-wish-creeper). It depicts the progression in life cycle that occur to a *śaiva śevāita* (true path servitors) from juvenile stage wherein he is required to effect more of physical/rigor related activity to that and those type which will be his (eventual) prerogative as ages and progresses up the ecclesiastical-service ladder. Therefore on the *dwāra lalāṭ bimba* (door top sill) the *kalpa-latā* ceases and only aged and old servitors having matted locks are shown (in caravan) offering various *aviśek* (investations) from either side. The *daksina* (right side of the door frame) being that of the *śādhus-santhas* (asetics-hermits), while the *bāma* (left) depicts non- *śādhus-santhas śaiva(s)* i.e., members from the other professional guilds (trade, commerce, industry). The

kriyā-kalpa-latā terminates with the depiction of Śri Devi in form of Lakṣmi (goddess of bounty and good family life). So, (it may be interpreted as) this creeper indicates to the person entering the *garbha griha* (womb room) that *śaivārcanā* (true-worship) leads and/or eventually is family/social wellbeing specific.

7. Deepak Bhattacharya & P.C.Naik; “A Report on A Heliocentric Planetary System In Indian Archaeology”, *Jor of The Asiatic Society*, Kolkata, Vol.52(4). In Press.
- 8 - Deepak Bhattacharya, *The Brāmhāsūtra on the Śiva Liṅgas and the Orion’s Path : Theoretical and Astronomical Study*, *Journal Of The Asiatic Society*, Calcutta, 2012.
- 9 – J.N. Bannerjee, *Development of Hindu Iconography*, Munshiram Manoharlal, 1956, Delhi.
10. Deepak Bhattacharya, *Desideratum* No. 23/1996, Berhampur University, Oḍiṣā, India.
11. The sketch has been down loaded from the WWW (with thanks). The web site says that it is that from the Ajantā murals (Maharsatra – cave art). The fact is to contrary. The Ajantā has no such art. However, our Fig-8 makes close call with the actual that is affixed on the Śri Gajannāth’s *Bhoga maṇḍapa*’s NE wall. The shrine is out of bounds for non Hindus.
12. A replica is available in The National Museum, New Delhi, Navy Gallery. The replica is hi-breed of numerous aspects of numerous artifacts as in the archaeology of Oḍiṣā.
13. The Germans during the II-world war, had designed the U-boats and their super warship ‘Bismark-1940-1941’<http://www.history.navy.mil/photos/sh-fornv/germany/gersh-b/bismarck.htm> & ‘Tirpitz, 1941-1944’<http://www.history.navy.mil/photos/sh-fornv/germany/gersh-t/tirpitz.htm> , which all are noted to have had larger front portions and were amazingly faster on comparative basis-DWT.
14. http://en.wikipedia.org/wiki/Port_and_starboard (for supporting information).
15. Deepak Bhattacharya, *Indian Ancient Sciences*; ISBN -978-3-8383-9027-7, M/s LAP LAMBERT, Academic Pub., 09-2010, Saarbrücken, Germany.
16. Sāralā Dās(Adi Kavi), *Māhābhārata-Birāṭa Parba*, Palm Leaf Manuscript, Or. State Museum, Bhubaneswar, No.Or.P. 121, 805.
17. Also at : southeastasianreview.com/Rajo%20-%20Swing%20Festival-2.pdf