Asian palm civet/ common palm civet /Toddy cat(Paradoxurus Hermaphroditus) and its relation to vish-tendu (Diospyros montana) and Avifauna.

By – Devendra Mistry

As a prime seed dispersal agent of tree Diospyros montana in Aravalli jungles especially in udaipur hill terrain.

As the common palm civet locally known as “Vijju” or “Bijju”, is a key role player in the seed dispersal system of jungle trees and other plant species. But here we will talk about the tree Diospyros montana (hindi name:- Vish tendu and localy called as “gaanglia” or “gaangli”).

The fruit of “vish-tendu” are poisonous in nature and so not much eaters of this fruit are seen and because of its poisonous nature the fruit of “vish- tendu” are used for fish stupefaction by tribal.

So, the question came into my mind that who is the prime seed dispersal agent of this tree.

So, in order to get the clue, the sights were selected where there was abundance of “vish- tendu” tree or fruiting “vish-tendu” tree. After observing these sights, I found scats of mammal which were full of “vish-tendu’s” fruit seeds.

When the scats were followed it led to civet burrows which were on straight cliffs and along side perrenial and seasonal streams and on the cliffs of both side of roads. The hills with stream flowing between creeks and thick groves of Sygegium cumini (Jamun, java plum etc.).

The trees at sthanak as a holy tree marked with diety or devra, where this tree is protected, were also observed at different places.

It was observed that the cliffs with civet dens, cavity or burrows had good vegetation of “Vish- tendu”, there were old “vish-tendu” also and new sprouting of “Vish-tendu” where scats full of “vish-tendu” seeds were found and hence dispersed by the flow of rain water or by trampling, smashing effect of mammals.

As the geoghraphy of Udaipur hills are of sedimentry flaky rock pattern and they are having natural cavities and soft to dig and good for germination.

As the rocks and the structure of the cliffs is flaky layered and quite comparatively soft and have a water holding capacity, the seeds get stuck into the flaky layered structure even half cm depth and cleft is there. So, the pattern of civet burrow on cliff or the hill and the structure of hill and the habit of civet excretion pattern helps in germination of “vish-tendu” seeds even on straight cliff walls of hill. The stream below the cliffs is a major food provider for this civet, (crabs, fish and dead fish, snakes, scorpions and the other organisms like frogs, etc.). and in the drinking and hunting process by civets, the scats full of seeds are also get dispersed along the way or movement trail’

So, I was able to find new sprouting along its movement trails

As the mature “vish-tendu” and other trees roots in these flaky and soft structure of rock tend to break or compress the rocks so clefts cleavages and grinding of flakes happens (due to compression created by the growing size of roots), so this helps in this kind of

trees germination and soft soil “generation”, I call it “chiesel effect” of roots in breaking of rocky structure.

The “vish-tendu” (Diospyros montana) and tendu or timru are from same genus but different species of trees. Tendu or timru(diospyros malanoxylon) is having sweet edible fruits while “vish-tendu” is poisonous.

“Vish-tendu” is comparatively low in height but it is very dense round canopy ball structure. You can often find as a shady tree in the tribal area in the house vicinity for sitting or leisure or where holy baskets are hung. It is often found on the hills and undulating terrain of Udaipur country side. It is so dense that hundreds of sparrows roosting in it cannot be seen. In the hot summers of this area it is in full bloom of leaves which is ideal for day time roosting or perching of lots of birds. Often the large birds especially Indian eagle owl, Dusky eagle owl, Indian scops owl, Brown fish owl are found roosting in it even you go close to the tree you cannot see them, and hence on its presence over hills protects evaporation and

maintains moisture retention .The movement of its fruit eater that is common palm civet further increases its spread on hills so other species of trees also come to that hill as nester, rooster birds and civets bring different kind of seeds in the vicinity of these trees and hence a jungle is developed in this area in a particular time.

This civet to me is a prime seed dispersal agent of "Vish-tendu" tree, because as the nature of the fruit is poisonous so this civet fondness towards it should be considered as other animal till now not seen eating its fruits. But ratal ,fox, and jackal can be suspected eaters of this poisonous fruit yet its leaves are eaten by hanuman langurs. It is a matter of question whether it eats this fruit as **regular diet or remedial diet to get free from worms or the scarcity of regular fruits and prey.** Although this article of research emphasised on the relation between this civet and "Vish-tendu", but it plays a very important role in other trees and shrubs seed dispersal.

The scats of this civet were having different seeds, and also the list of fruits eaten by it which are as follows :-

List A 1)

1. Jamun or jambu (Sygegium cumini)

2. Timru or tendu (Diospyros melanoxylon)

3. Algae and hydrophytes mixed with worms and shrimps.

4. Rayna or rayan or khirni (Manilkara hexandra)

5. Khajoor (Phoenix sylvestris)

6. Gangchi or gangcee or khat khati both (Grewia tanex) or donkey berry and (Grewia flavescens)

7. Bargad (Ficus bengalansis), umber or audumber or gooler (Ficus glomarata or Ficus racemosa) (Ficus religiosa)

8. Sindoor (Mellitus phillipensis)

9. Imli (Tamarindus indica)

10. Ber and bor and pemli bor (Zizipus nummularia, Z. mauritiana)

11. Desi goondi (Cordia myxa)

12. Jhermari (Lantana camara)

13. Churail or papdi or kanji or bandar ki baati (Holoptelea integrifolia)

14. Bahera (Terminalia bahlerica)

15. Arjun (Terminalia arjuna)

16. Saadad (Terminalia tomantosa)

17. Gaundal or gondla or gurjan (Lannia coromandalica)

18. Ankol ,aakol (Allangium salvifolium) it is great fruit for parakeets indian grey hornbills, at a large tree of ankol in twenty minutes 150 rose ringed parakeets and 11 indian grey hornbills fed on it, and more were coming at Dhariyawad mumadeo triveni sangam temple.

19 Chirronji or charoli (Buchnania lanzaan).

20 Junglee karonda (Carrissa spinarum).

21 Kumthaa(Acacia senegal)

22 badam (terminalia cattapa) country almond

23. Peepal (Ficus religiosa, Ficus longifolia)

24.Aam, keri (Mangifera indica)

25.Mahua (Madhuka indica or Madhuka longifolia)

26. Lumb-pan or lampan (Bridelia retusa)

27. Angreji babool (Prosopis juliflora)

28. Makoy (Solanum nigrum , s.n. variety vulgare)

29. Charbotee,rasbhari (Physalis indica / Physalis minima) Indian cape gooseberry

30. Ashwagandha (Withania somnifera)

31. Moulishree or molsiri (Nimusopselengi)

32. Chiku , sapodila (Manilkara zapota)

33. Saanp ka boota (Arisaema tortuosum), the red berry portion of it with seeds, “Spadix” poisonous

34. Sitafal (Annona squamosa) custard apple sugar apple

35. Terbooz (Citrullus lanatus,)

36 Kair (Caparis decidua)

37. Rohan (Soyamida fabrifuga), (indian red wood tree)

38. Ganna (Saccharum officinarum) sugar cane

39. Chandan (Santalum album) sandal wood

40. keeker, jungle jalebi, angreji imli (Pithecellobium dulce)

41.Kharbooz, kakadi, kachri, dochri, junglee tindori (cucurbitaceae family fruits)

42.Kalam (Mitragyna perviflora)

43. Phalsaa (Grevia asiatica)

44. Khat mith (Phyllantus acidus)

45. Khumtha-ulta kanta (Acasia senegal)

46. Desi babool (Acasia nilotica)

47. Shehtoot (Morus alba) mulberry

48. Hingot (Balanite aegyptica)

49.amrood, jaamphal (Psidium guajava) guava

NOTE:- first hindi name, in bracket scientific name then english common name.

Emphasis on civet and its role and relation with jungle :-

1. As the Diospyros montana is poisonous fruit and hence its seed dispersal agent must be given importance.
2. As the tree of Diospyros montana is very shady, medium height , globular canopy, it has a very important role in moisture retention, evaporation preventer, very good roosting , nesting ,hiding, and religious tree for tribal.
3. To eat this tree fruit, the civet brings other tree or plant tree to the walking trails, cliffs , hills and sedimentary rock hills or in clefts of undulating

landscapes where they sprout and compress earth to generate the soil, water nerves, or passage.

4.Though the civet has wide range of food from edible left over by humans, insects, snakes , birds and various other vegetation n fruits, here its role as the main seed dispersal of the “vish-tendu” tree is High Lighted .

5.This tree is very shady thick round canopy and very green in summers also and hence very important for birds and jungle ecology, it is having long life and often no eaters or no fodder value it preserves the hill moisture or prevents evaporation , so to eat its fruit, the civet is dispersing other seeds in its vicinity and in different season to eat other fruits it is spreading its seed in other tree vicinity while near its burrow and in clefts on cliffs it is spreading “vish-tendu” seeds which germinate in stony rocky sedimentary terrain. Thus, this tree plays an important role for jungle expansion and civets survival, important tree for bird’s roosting

and nesting and so in this process the civet comes as major seed dispersal agent of this and other trees also which then constitute a diverse jungle and bird diversity.

The civet itself is a prey base of various reptiles and mammals so looking at whole scene, jungle ecology is connected to everything, every organism, every living being. Here I state that civet's role in jungle enhancement should be studied deeply and should be honoured.

So, in all I see civet as a **trophic cascade** agent of jungle.

6.The various photographs are attached where there were burrows of civet and "Vish-tendu" tree ecology was studied and also the names of places where civets were seen eating or their excreta was found and studied (some photographs to show the geological structure of rocks).

Important :- the "other brother" of toddy cat i.e. small

indian civet (Viverricula indica) should also be studied which I feel is declining as compared to toddy cat.

Observation areas:- udaipur, Chittorgarh, Pratapgarh, Dungarpur, Rajsamand hilly terrain and mainly Udaipur's Ubeshwar area, Jhameshwar, Sajjangarh , Badi, Neemuch mata hill, kharpina nursery stream and adjoining hills on national highway. Gulab bagh Udaisagar hills, rest to keep anonymous

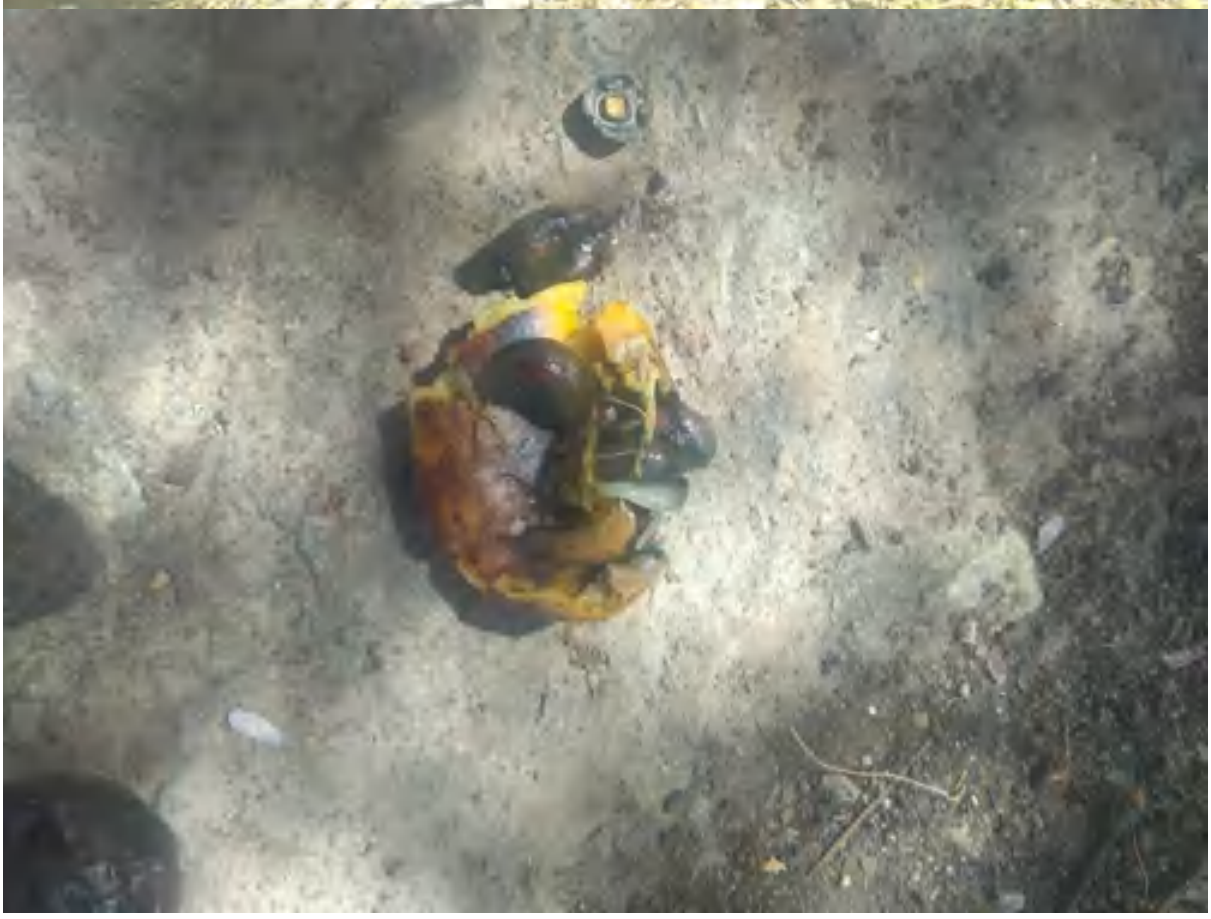
NOTE:- 1) The village, "Gingla" I think named after the tree vish-tendu as:- ganglee > ganglia > gangla > genglyaa > gingla, as the dialects and phonetics etymology.

2) In five year, I came across 28 road kills of civets.

3) The Udaipur's hill excavation, and clearance for national highways and developmental claims, without scientific advisory, will act as a shattering blow to civets and many more denizens of the hills.as lot of hills has been flattened rather than thinking other alternatives like tunnels and safe corridor/passage for wildlife.

FIGURE 1PIC 1

FIGURE 2PIC 2

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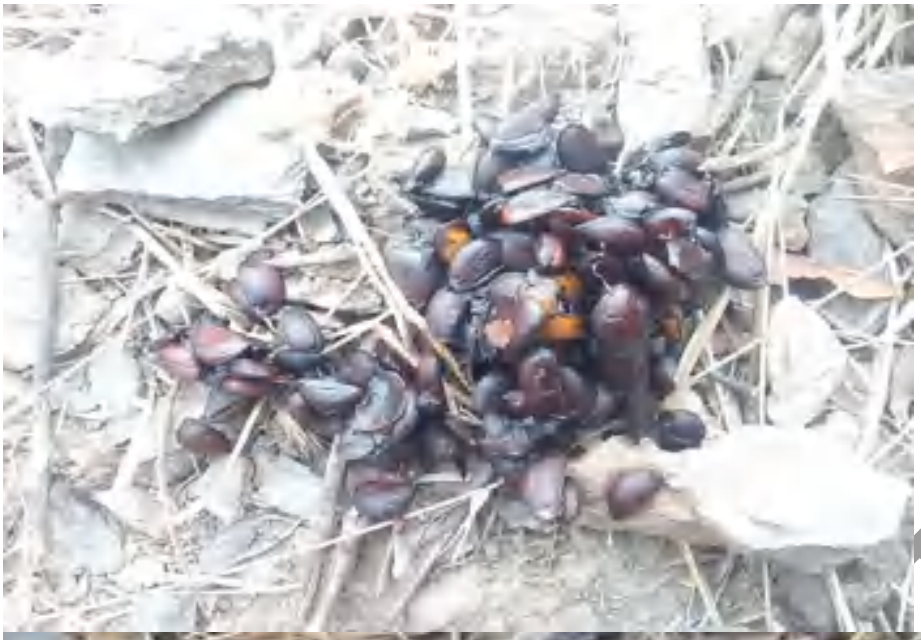

SOME ROAD KILL CIVET PICTURE:

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