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Zero Budget Natural Farming and Bovine Entanglements in South India

New Affective Relationships

Figure 1:
Lakshmi and Appachan.
Photograph by author.

Lakshmi was different. She stood by herself, tied with a loose rope around her neck in the main yard of Appachan's small four-acre farm in Nadavayal, one of the Christian settler pockets of Eastern Wayanad, South India. She would not stand with the hybrid cows—those ubiquitous crossbreeds that were a mix between local cows and exotic breeds like Brown Swiss, Holstein-Friesian, or Jersey, who had to spend all day in the stable. Appachan cared for her like for none of his other half dozen cows, who had over these past months fallen so much in his estimation that he had conveyed their care entirely to his adult son. Lakshmi was treated by Appachan and his family like a pet; cuddled, stroked, caressed, and admired for her beauty.

It was only logical that she was the single bovine in the household to have a name—the others were just cattle. His "hybrids," as he called them, were remnants of a time when Appachan was still following the recommendations for dairy improvement in the state of Kerala and was yet unaware of the microbial abundance provided by "real cows."

Appachan's appreciation of Lakshmi as a "real" cow goes hand-in-hand with his realization that he had, for many years, falsely assumed that any cattle could be cows—*paśu* in Malayalam. Now, however, he had become convinced by his teacher in natural farming that only *Bos indicus*, the Indian zebu cattle, are "real" cows and that European *Bos taurus* and its crossbreeds are not actually cows but a dangerous alien species. Jokingly, Appachan referred to crossbreds as *yakṣi*, after the female vampire-like spirit of Kerala mythology who, whenever she visits earth, sucks the blood of male virgins after seducing them.

Appachan and other natural farmers follow a nativist biopolitics, whose new dualist taxonomy casts exotic bovines outside the boundaries of the cow species and even outside nature itself. The degree of disaffection for hybrids is mirrored by the natural farmer's newly found regard for indigenous breeds, zebu cows, *dēśi* cows—as his guru would say—or *nāṭan paśu* (native cows) as Appachan and farmers like him would call them.

Lakshmi's excrement, her urine, and her dung, were venerated by her human owner as precious matter, as a part of Nature (with a capital n) that provided a myriad of beneficial microbes and substances, which the farmer would in turn culture and ferment to create their "miracle preparation": *jīvāmṛta*—The Nectar of Life.

After preparation, *Jīvāmṛta*, with its billions of beneficial microorganisms, is then applied to Appachan's fields, where the ferment generously attracts and feeds even more microorganisms, earthworms, and bacteria, which in turn break up micronutrients like nitrogen, making them available to plants. Native cow breeds, in their multiplicity, are the key multispecies assemblage for the health and fertility of naturally farmed soils, which in themselves are another group of living, multispecies assemblages built on relations of symbiosis,[1] mutuality,[2] and affect.[3]

1 Lynn Margulis, *Symbiotic Planet: A New Look at Evolution* (New York: Basic Books, 1998).
2 Kniaz P. A. Kropotkin, *Mutual Aid: A Factor of Evolution* (Radford: Wilder Publications, 2012 [1902]).
3 Carly Hustak and Natasha Myers, "Involutionary Momentum: Affective Ecologies and the Sciences of Plant/Insect Encounters," *Differences* 23, no. 3 (2013): 74–118.

Jīvāmṛta: The Art of Fermentation

Ingredients:

175 l	water
10 kg	Zebu cow dung
10 l	Zebu cow urine
2 kg	jaggery
2 kg	pulses (powdered)

A handful of (virgin) soil

Preparation:
Dissolve the dung using your fingertips, add all other ingredients, stirr clockwise and let it ferment for a couple of days, stirring occasionally. Ready when it emits a pleasant fermented aroma.

Application:
Mix 1 l *jīvāmṛta* with 10 l of water and apply to soil and leaves. Repeat every two month.

Figure 2:
How to prepare The Nectar of Life. These instructions have been compiled by the author according to the recipe of Subhash Palekar, a promoter and guru of Zero Budget Farming.

Zero Budget Natural Farming

One year ago, at the age of 64, Appachan—a member of the Christian settler community that had moved to Wayanad's forest frontier after the Second World War—started practicing Zero Budget Natural Farming. This method is one of the more successful heterodox natural farming agronomies that is emerging in India and challenges agricultural development with its technoscientific or sustainable/organic guises.[4] Appachan and other natural farmers of Wayanad—many but not all of whom are Christians and older farmers—had first begun looking for native cows after their encounters with the charismatic guru and promoter of Zero Budget or Spiritual Farming, Subhash Palekar. Palekar has held natural farming camps in Wayanad since 2008,[5] and converted many of the participants to a farming ontology of liveliness, naturalness, and microbial abundance for which the excrements of *nāṭan paśu* were essential. Lakshmi was thus one of many native cows reintroduced across the district by this very recent brand of natural farmers.

All his life Appachan had been committed to what he now called chemical farming (*rāsa kṛṣi*), in which he had followed the recommendations and "Packages of Practices" disseminated by the agricultural extension service of Kerala's development state. These recommendations had imposed an increasing reliance on synthetic fertilizers

4 Daniel Münster, "Agrarian Alternatives: Agroecology, Food Sovereignty, and the Reworking of Human-Environmental Relations in India," *Rivista Degli Studi Orientali Nuova Serie* 88, supplement 2 (2015): 233–50.

5 See Daniel Münster, "A Letter to Subhash Palekar, Natural Farmer," in Beyond Doom and Gloom: An Exploration Through Letters," ed. Elin Kelsey, *RCC Perspectives* 2014, no. 6, 23–25.

and pesticides, the cultivation and rearing of "improved" varieties of cultivars and livestock, and the production of "nonfood" cash crops such as coffee, areca nut, or rubber. Together, the growing costs of farm inputs, the lurking debt trap of increasingly speculative farming, the drying up of wetland soils, and most of all, a deep concern about bad-tasting, unhealthy food and cancer-causing pesticides, had estranged Appachan and several dozen other farmers in Wayanad from Kerala's development consensus, attracting them instead to the new techniques and radically ecological ontology of Zero Budget Natural Farming.[6]

Lakshmi's urine was collected in its own bucket and her droppings were picked up with great care by members of her human family. They also made sure that her precious excrement never got mixed up with that of the hybrid cows, whose dung and urine where collected rather carelessly in a large tank to run the household's biogas installation, which the government had subsidized some years ago. Some natural farmers had cemented small dams in their cow sheds to make sure that the substances of their native and hybrid cows didn't mingle. In contrast to her crossbred sisters, Lakshmi was not expected to give any milk; therefore, she was neither earmarked for artificial insemination by veterinary officers nor for feeding with the enhanced "cowfeed" that would make her hybrid companions produce up to 20 liters of milk a day. Palekar had taught his followers to have a skeptical outlook on the "dairyfication" of Indian diets and agriculture, and his true followers were giving up both the production and consumption of milk products for the sake of "nonexploitative" agriculture. Thus, Lakshmi was allowed to graze in the spice garden of the farmer's field and led with great affection on a leash to different places where delicious greenery could be found.

Improving and Protecting Landraces

For decades, the state of Kerala cared little for native breeds. Since the 1960s, in its drive to increase milk production and to promote animal husbandry, it had classified most indigenous cattle as unproductive, undesirable, or defective. Forging ties with the Swiss government in the Indo-Swiss Project, the state of Kerala launched a dual campaign of

6 Daniel Münster, "Agro-ecological Double Movements? Zero Budget Natural Farming and Alternative Agricultures after the Neoliberal Crisis in Kerala," in *Critical Perspectives on Agrarian Transition: India in the Global Debate*, ed. B. B. Mohanty (New Delhi: Routledge, 2016), 222–44.

crossbreeding exotic cattle and of exterminating unproductive indigenous cattle. The ambitious "planned breeding program under tropical conditions"[7] was launched with the import of 22 Brown Swiss bulls and 46 cows from Switzerland, and the establishment of Artificial Insemination (AI) Centers across the state. The successor organization, the Kerala Livestock Development Board, has grown to be the largest frozen semen producer in India, and in 2004 sold more than 1.5 million doses of frozen semen to 2,971 AI Centers in Kerala alone. The Board proclaims that 85 percent of Kerala's current female milk cattle have acquired genes from Brown Swiss, Jersey, Holstein-Friesian, or American Brown Swiss, whereas in the rest of the country crossbreeds account for only 12 percent of the milk cattle population. Milk production and consumption have increased dramatically from 200,000 tonnes in 1956 to 2.1 million tonnes in 2006.[8]

In its fight against unproductive landraces, the government implemented the infamous Kerala Livestock Improvement Act of 1961. Farmers remember the slow violence of this drastic state intervention into their breeding practices; the act required them to obtain a "license," issued by a veterinary officer, for keeping bulls (cattle or buffalo) beyond a prescribed age—bulls whose owners had been denied licenses had to be "castrated within one month" under threat of penalization. Next to "defective," "inferior," or diseased bulls, animals to be denied licenses included those that appeared to the licensing officer to be "of a breed which it is undesirable to propagate in the State of Kerala." Most bulls were sold for slaughter in the years after 1961, and the act ultimately resulted in the mass culling of native breeds. Small plot sizes and the prevalent cultivation of perennial plants (which need very little plowing) made it undesirable to retain castrated bulls, whose only alternative use would have been as draft animals.

Figure 3: Government Veterinary Dispensary, Wayanad. Photograph by author, 2009.

7 "Livestock Development Board," Kerala Livestock Development Board, accessed 15 February, 2016, http://www.livestock.kerala.gov.in/

8 Richard Gerster, *Partners in Development: India and Switzerland* (New Delhi: Social Science Press, 2008), 43.

For Palekar and his natural farmers the praise for microbial abundance and importance of the zebu cows is coupled with their bio-nationalist critique of European *Bos taurus* and its crossbreeds. Palekar's powerful campaign against the demonic and abominable non-Indian, nonnatural, not-cow species that were introduced as part of a "preplanned foreign conspiracy" to destroy Indian agriculture, ratified many small holders' economic disaffection with hybrid cows. Their higher yields came at the cost of greater expenditure on feed, shade, medicine, and veterinary attention. When Wayanad's recent converts to natural farming went looking for landraces, they found them nearly extinct. In the ensuing race for local breeds these farmers teamed up with individuals and scattered institutions that had in the past devoted themselves to the conservation of bovine heritage. The most important of these was the Vechur Conservation Trust, which was set up in 1989 on the campus of the Kerala Agricultural University by Professor Sosamma Iype and her students to protect the Vechur cow, the smallest cow breed on earth. Vechur, the only native cattle breed stemming from Kerala, has made it as "INDIA_CATTLE_0900_VECHUR_03030" on the list of 39 indigenous breeds recognized by the National Bureau of Animal Genetic Resources. All cows not belonging to breeds on this list are classified as nondescript cattle.

Not adhering to the scientific definition of breeds (which is very vague), vernacular taxonomy has identified many more "breeds" of Keralite cows on the basis of their place of rearing. Kerala's natural farmers have identified several more "own" (*svantam*) varieties including the Vechur, Kasargod dwarf, Wayanadan, Cheruvalli, and Vadagara. Mr. Balakrishnan, who was collecting and trading 12 breeds of cattle, highlights the importance of place: "They belong to a particular place (*sthalam*) with its particular environmental conditions. One cannot say that they are from Kerala, they are older than the state of Kerala." Ready to compromise on the question of "recognized" breeds—as long as they get one of the native breeds—natural farmers are very careful to test that the local cows they look for are indeed native, *dēśi, nāṭan, svantam*; as only those are effective providers of microbial plenty.

Native Cows and the Nectar or Life

Before he sent them off to rid their farms of all chemicals and hybrids, Palekar gave his followers a set of tests to accurately identify zebu cows. Among its characteristics are a hump on the shoulder, oily skin, a straight back, beautiful eyes, and a pronounced dewlap (the flap of loose skin under the throat). Touching them with a finger, natural farmers love to demonstrate the native cows' ability to dispel insects by shaking their skin where they have been touched. But the morphology of native cow dung is perhaps the most important indicator for the vernacular taxonomy that distinguishes native cows from aliens or hybrids. Native cow dung has a pleasant fragrance, is semisolid, and falls "like a ring" (according to Haridas, a natural farmer) rather than in the flat cowpats of the hybrids. Wayanad's natural farmers like picking it up to inspect it for the insect holes that are a clear sign of the microbial attractiveness of native cow dung.

This is how Subhash Palekar, in his inimitable English, describes his olfactory theory of affect between the aromas of dung and the earthworms in the yogic state of *samathi*:

> As the deshi cow dung is dropped on the surface of soil, immediately some scent messages are spread out from that cow dung dropping in the soil towards the dormant (Samadhi) local earthworms. As a result, the local earthworms break the Samadhi and start to activate. That means, there is tremendous attraction capacity in the local cow dung to attract the local earthworms.[9]

But native cow dung is not allowed to rest on the ground very long. Natural farmers collect it to prepare *jīvāmṛta*, the cheap, simple, and effective ferment that has an even stronger "capacity to attract" beneficial organisms.

The Limits of Relationality

It was his care and affection for Lakshmi that stood at the center of Appachan's recent conversion to natural farming, *prakṛti kṛṣi,* and his support for moral and affective shifts toward Nature, Nation, and Autonomy in smallholder agriculture. His care for his native

9 Subhash Palekar, *The Principles of Spiritual Farming: Zero Budget Spiritual Farming, part 2* (Amravati: Zero Budget Spiritual Farming Research, Development & Extension Movement, 2013), 53.

cow was a central activity in his reimagination of farming as a symbiotic and relational activity, an affair that relied on the more-than-human "togetherness"[10] of a variety of naturally generous species such as zebu cows, microorganisms, earthworms, and humans. For natural farmers the native cow, with its metabolic capacity for eating plants, ruminating and digesting those plants within the ecosystem of its guts, and its generous supply of an ocean of beneficial microorganisms through its dung, was part of their microbiopolitics of "rethinking soil as a living, interdependent community."[11] The native cow's attested friendly character, its beauty, and its modest requirements for food and water made it the ecological and cultural embodiment of self-sufficient and yet bountiful farming.

However, the relational ontology of human-cow-plant-microbe interconnectedness—"the mesh"[12] that is carefully cultivated—depends on drawing new boundaries: literally dividing the cowshed between those breeds that excrete desirable substances and the lesser beings that are released to the impurity of the market, their excrement metabolized for energy (biogas). Increasing intimacy and new relationships of affective care come at the expense of severing affective connections with increasingly unloved bovine others. Natural farmers' and veterinary officers' approaches to the care of non-native cows rest on similar logics. State breeding programs had placed unproductive and nondescript landraces outside the temporality of technoscience, development, and food security; natural farmers have, by reviving landraces, placed foreign cows outside the species boundary of cattle and thus outside of Nature and Nation.

10 Filippo Bertoni, "Living With Worms: On the Earthly Togetherness of Eating," PhD diss., University of Amsterdam, 2016.

11 See Maria Puig de la Bellacasa, "Making Time for Soil: Technoscientific Futurity and the Pace of Care," *Social Studies of Science* 45, no. 5 (2015): 691–716, particularly 692. For more on microbiopolitics relevant to this context, see Heather Paxson, "Microbiopolitics," in *The Multispecies Salon*, ed. Eben Kirksey (Durham NC: Duke University Press, 2014), 115–21.

12 Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press), 15.