Bioforms and biophilia in Thai poetry and the extinction of experience

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The evolutionary biologist Dr. Edward O. Wilson coined the term 'biophilia' in a 1984 book of the same name. Biophilia (from Greek bios 'life' and philos 'dear, friendly') refers to the emotional response of people towards nature. It is a type of engagement that has, according to Wilson, a genetic base. The genetic code of the human organism predisposes one towards an emotional need to ally oneself to the natural world. A recently published book, The Biophilia Hypothesis (1993, Island Press/Shearwater Books), presents the evidence for the theory and supports several of the notions put forth in this paper.

Thai poetry, in particular classical poetry, is noted for its long catalogs of flora and fauna, arranged in stanzas governed by the rules of Thai prosody. My own explanation for this rhetorical device is that, for one, it enumerates a poet's encyclopedia of flowers, trees, fish, animals, and fruits—a compendium of biological knowledge of the time, just as oral poetry lists the lineage of a "not-to-be-forgotten" clan going back for tens of generations or folk tales memorialize culturally significant flora and fauna. But in poetic form and placement within a narrative text, the chain of bioforms is also a manifestation of biophilia. The recitation of the names, the music it creates, and the images of the lush and exotic interacting wildlife of the jungle, streams, and mountains that they evoke, induces a deep love of and need for nature and the desire to be in harmony with it. In purely literary terms, the catalogs, which might have roots in Chinese fu or the Indic literary tradition of describing garden and forest and their spiritual powers, advance the plot of the narrative and provide mood and setting for the actors in the tale.

This paper presents examples from Thai poetry to illustrate the biophilia hypothesis. Implications for the modern urban Thai biophile and the vanishing bioforms in Thailand will also be discussed. Ultimately, the extirpation of bioforms also entails the extermination of experience, an experience that informs the poet and his audience.


MON-KHMER STUDIES 25:161-189

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Introduction: The Modern Thai Biophile

An episode in a recent Thai short story, *The Capital,* deals with a young male day laborer who has recently come to find work in the capital city, Bangkok. It is the end of a work day when the story takes place. He is caught in a traffic jam inside a bus packed with tired and sweaty working class commuters. The young man is a villager from Northeastern Thailand or "Isan," the poorest and harshest region of the country and hence the most undeveloped, the most rural. The counterpart of the country boy, who finds himself on the same bus, is a young city clerk, most likely dressed in obligatory white shirt and tie. He too is a recent rural migrant to the city, an up-country transplant who needs money to support himself and his dreams, which include eventual marriage to his sweetheart back home. Both young men are seated in the back of the bus, within earshot of each other, as it inches its way along the rain-drenched streets of the megalopolis. Just as the heat, humidity, tedium, and fatigue seem about to overtake all of the passengers, the city clerk in particular, whose thoughts of discomfort we read, the sound of the Isan youth singing a folk song softly to himself is heard. Eyes closed, as if to blot out the pain of the present, he sings these poetic lines:3

...hōm hōm, dēk krathin
ruay rarin khlaaw klin koon faaŋ
hèt tāw khūn ?yūu rīm thāw yāa naaŋ
mcoon hēn bua sālaaŋ
lāy pīm rīm buŋ
...yāak cā? dēt maa dōm hōm nācy
lāon ūaam mūm khōcy khōcy
kōc ūaam māy thūŋ
yāak cā? pleen rāaŋ pen maleeŋ phūu fūŋ
pleen dāy cā? bin pay khluūn khlaaw
caaw bua tūum bua baan

Sweet is the fragrance of the krathin blossom, mingled with the fragrance of hay---the tap taw mushrooms sprouting alongside the yaa naang vines.

I gaze at the eye-catching lotus blossoms floating at the edge of the marsh.

I would like to pick a blossom to sniff its fragrance.

To let it caress my hand,

But it is beyond my reach.

I would like to turn myself into a dragonfly or a bee

Once transformed, I would fly to fondle

The lovely lotus blossom.

The song, full of the emotion of longing, is also a mini-catalog of bioforms: krathin and lotus blossoms, hay grasses, and tap taw mushrooms, yaa naang vines, dragon flies and bees. A country song, sung by a country boy, the lyrics bespeak of a definite displaced "biophilia," a feeling of longing and fondness for the "friendliness" of the life forms of nature found only in the remote countryside far from congested Bangkok, coupled with a passionate desire for love. At the end

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2 *The Capital,* by Wanich Jarunggidanan. A short story translated into English by M.R. Usnisa Sukhsvasti and published by Chulalongkorn Translation Center, Faculty of Arts, Chulalongkorn University, Bangkok, 1985. The volume begins with the original Thai and is translated into eight foreign languages.

3 The author attempts to write out the lyrics in the Isan dialect, which I, in turn, have transcribed from his Thai transcription into a phonemic one; hence some of the words are not Standard Thai spellings. I have bolded the words that form the rhyme pattern. I have also changed the original English translation somewhat in an attempt to pick up some details that were dropped.
of the song, tears can be seen collecting on the eyelashes of the Isan migrant decrying the absence of human love expressed through the language of symbols drawn from the flora and fauna familiar to an upcountry young man.

The author's intent is to recreate a feeling of loss and longing and the consequential alienation experienced by the newly urbanized man. At the same time, the hot and humid bus ride is presented as a metaphor for modern Bangkok. The ride encapsulates the cramped, dirty, and sweaty environment that the common person is forced to endure there.

One dimension of expressing the sense of loss is through an enumeration of biological forms, both plants and insects. The longing is for him, transformed and transported as dragonfly or bee, to be reunited with his love, the lotus or krathin blossoms. The song is full of meaning for both men crammed into the bus because they grew up with these life forms, and the affinity endures even within the fields of cement and asphalt in Bangkok.

The ultimate loss that gnaws at the pit of the stomach of the reader, however, lies in the future, when generations who have not grown up with contact with or access to nature will find less experiential meaning in such songs and poetry. The knowledge of some of these bioforms will endure only as names in an old song or as a catalog of trees, flowers, fishes, and elephants in classical poetry, such as the lines below from *The Tales of Prince Sammutakote*, parts of which date from the Auythaya period, some 300 hundred years ago. By juxtaposing the folk song and the following excerpt from the classic poem, we can see the continuity of Thai aesthetic experience over the centuries, between the fictional Thai prince and the Isan farm boy turned laborer. The excerpt below (stanzas 436-439) depicts Prince Sammutakote setting up camp in the forest in preparation for an elephant hunt. The experience of being alone in an environment of pairs of birds flying about in a forest of trees and perfume-enveloping flowers leads him to think of and long for his beautiful Surasuda, the woman he left behind waiting in the court with his parents. It is in these sections that the reader is presented with part of the catalogs of bioforms—in this particular stretch of stanzas, a list of trees and flowers. The key phrase that defines biophilia is in the fifth stanza: "...the wind blew...to invite His Majesty to wander about to delight in the delicate plants."

From each nest the husband
Flew out to compete,
To seek food for his wife
Swiftly diving and whirling about.

The prince saw these birds,
Felt alone, strove to endure,
But missed his heavenly wife
as loneliness pervaded.

Every kind of tree
filled the vast forest.
Pollen spread, unlocking
Heavenly, delightful perfumes.
Flowers budded in chains,
In clusters and bunches;
Branches grouped together
Like hands stretching out.

He gazed at the trees as the wind blew,
As though it came to admire,
To invite His Majesty to wander about
To delight in the delicate plants. [tree and flower catalog begins]

Du, pru, prayong, yom,
Sarapi, phikun, janjana—
Muang and monthan,
Flowers mixed with the kanyan.

Budding flowers ordered,
Pleasant sandalwood perfumes
Wondrous jambok,
Kannika mixed with kaew

Karakate, ket kaew,
Mali and maludi mixed,
Bunnak beside
Maliwan and wannawan.

The girth of the tree seemed
Like the waist of his beauty,
An encircling golden vine,
Like his Lady's arms embracing him.

Nangyaem, khatueng,
Dancing and pulling lamduan,
Jik, jaeng, maeng, mong-
Kut, khuy, khu khlay.

Trees stood high and low
As though dancing and turning.
Branches, when breezes blew,
Swayed as dragons lifted high.

Fragrant scents and aromas hung,
Gentle breezes blew,
Ready ripe mangoes exuded their aroma,
And the monnak tree flitted uneasily.
He finished admiring every tree
As evening drew near,
Suriya late in the day
Hiding behind Mount Meru.

And now with Suriya hidden,
"Surasuda, my beauty,
Now, looking before me
You're not there, only loneliness!

Both common sense and linguistic research tell us that comprehension of a "text," be it a popular song, a piece of classical Thai poetry, or a treatise on nature, is a matter of prior knowledge, experience, interest, and focused attention. The two young men on the bus share the common knowledge and experience of the countryside and closeness to nature. The reader of the short story will fully comprehend the experiences the writer is detailing only to the degree that he or she has known and experienced both urban and rural Thailand. Likewise, the student of Thai literature will better be able to enter the world of Prince Sammathakote to the extent that he or she has had direct sensory contact with the natural world so carefully catalogued and thereby used to capture the complex emotion of biophilia. However, as the world of market economies moves in to dominate modern life, the rural experience and knowledge of bioforms recedes. That experience, in part "the biophilia tendency," however is preserved in classical Thai poetry to an uncanny degree for those decreasingly few who have the knowledge and experience to fully participate in the recreation of the "biostate".

As E.O. Wilson has commented recently, "just the nearness or even the depiction of natural environments is psychologically restorative."\(^4\) Thai poets have that very ability to evoke biophilia—the affiliation for nature—in their works. This is especially true of the earlier classical poets. But even modern Thai poets and songwriters continue the tradition. As bioforms disappear, as the tropical rainforests that once covered much of Southeast Asia are leveled by the saw and the bulldozer, so too will the poet's source of inspiration and material be lost. Bioforms and biophilia go hand in hand.

Disappearing Oral Catalogs of Southeast Asian Bioforms

On a global scale, knowledge of the names of things in nature is being lost at a rapid rate even in our lifetime as forests are clearcut and their human inhabitants displaced. Jared Diamond records the phenomenal encyclopedic memory of lifeforms among preliterate peoples in "New Guineans and Their Natural World."\(^5\)

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While on the island of Kulambangra in the Solomon Archipelago, I had two free days at the end of my fieldwork, and so I spent that time transcribing the knowledge of local birds possessed by one Kulambangra villager, Teu Zinghite. For every one of Kulambangra's eighty resident bird species, Teu dictated to me an account consisting of its name in the Kulambangra language, its song, preferred habitat, abundance, size of the group in which it usually foraged, diet, nest construction, clutch size, breeding season, seasonal altitudinal movements, and frequency and group size for overwater dispersal...New Guineans have such detailed recollections not only for people but also for certain bird and animal species that they encountered only once. (p. 257)

Jared also points out that the knowledge of this jungle inhabitant extends largely to species that are of economic utility. Butterflies, for example, had little or no importance in the Kulambangra economy, and they are not cataloged to the same extent as the birds, which are killed for meat and feathers and for the cash income derived from foreign export.

In the same general area in Southeast Asia we find the Temiar, mountain dwelling hunters and gatherers, who even more dramatically illustrate the biophilia hypothesis. Roseman captures Temiar affinity with nature in these words.6

Temiards have a peculiarly intimate relationship to the land of the jungle, its flora and fauna, hills and rivers. They move through it daily, hunting, gathering, fishing and gardening, garnering cues as they travel from the sounds of various birds, insects, and animals that penetrate the dense jungle foliage. They cut each stalk of rice by hand, dig tubers, climb up into the trees to gather fruits. This closeness to the land comes out in the way they think about it. In the Temiar worldview, all entities—humans, other animals, plants, mountains—embody bounded souls that can be liberated as unbound spirit. The world resonates with life, with potentially animated being. (Roseman, p. 24)

According to Roseman, Temiar music—meaningfully patterned sounds and movements constructed with the pulsing of bamboo-tube percussion accompanying singing and swaying ceremonies—"sets the cosmos in motion, releasing spirits from their bounded forms so they can interact with humans." (p. 15) The feeling, the esthetic experience of "longing" that was so striking in the folksong of the Isan laborer on the Bangkok bus and the "loneliness" of Prince Sammutakote is not unlike that experienced by the Temiar.

The Temiar say that pulsating sounds of the Malaysian rainforest, such as calls of particular birds and insects, move with the beat of the heart, and thus move the listener to feel longing...These socially structured sounds, sonic icons of the heartbeat, move the heart to longing. (Roseman, p. 15)

Out of Love, or For Money—Or from the Genes?

The episodes of Prince Sammutakote, the young laborer on the Bangkok bus, the Kulambangra villager, and the Temiar hunter-gatherer illustrate a spectrum of attitudes towards the natural environment. All exhibit extraordinary intimacy with nature. The sensual experience of the neutral world moves Prince Sammutakote to long for his Lady Surasuda. The Thai worker is caught up in love and in the romance and reproductive aspects of nature also. His urges are mimetic; he wishes to transform himself, indeed transport himself, in such a way as to express his sexuality, to realize the truly sensual. The Kulambangran native, as we see him, is drawn in economic terms. He is the entrepreneur, the dealer in exotic birds who knows his avian inventory well. Excluded from his range of knowledge and interest are the uneconomic, such as (at that time) unmarketable butterflies, of which he has little classified information or interest. Finally, the Temiar forest dweller does not appear to see himself as all that separate from the rest of the forest world.

However, none of these instances of behavior that engages nature would seem to support the Wilsonian theory of a genetic-based biophilia to a very strong degree. As Jared suggests in his research, human attitudes towards nature are cultural constructs, behavioral systems peculiar to specific societies. Attitudes towards nature vary so much from people to people, even within a common culture, that it is difficult to generalize about a strong genetic base to humankind’s response to bioforms. The genetic argument, it seems to me is weak but the cultural argument much stronger because it can be observed, discussed and compared across community lines.

Alternatives to the genetic argument, as put forth by Nabhan and St. Antoine are as follows:

1. Perhaps biophilia is not genetically determined but is a set of learned responses.

or

2. Biophilia could be a set of behavior based on a number of genes, for which any particular individual may have some but not all of the genes.

or

3. A child’s learning environment greatly conditions the expression of any genetic basis for biophilia. Unless the appropriate environmental triggers are present in a certain cultural/environmental context, biophilia is unlikely to be fully expressed.

7 See The New York Times, Sunday, June 5, 1994: "Isolated Papua New Guineans Fall Prey to Foreign Bulldozers: 'Last Rain Forest' Timber vs. a Culture" p. 1. This article points alarmingly to the recent rapid deforestation of Papua New Guinea. It also notes that the island series is home to what is perhaps the greatest diversity of bioforms anywhere, including the world’s largest butterfly.

The third explanation is easiest to affirm with any certainty, as Nabhan and St. Antoine do. Pointing to Brown's article on Ifugao hunter-gatherer's 2,700 labeled categories of biota, the authors go on to note the large numbers of plants and animals mentioned in O'odham and Yaqui (U.S. Southwest Indian communities) stories, ceremonial orations, and songs.

The O'odam refer to at least 26 taxa of plants, 16 taxa of invertebrates, 13 taxa of reptiles, amphibians, and fish, 28 taxa of birds, and 20 taxa of mammals. Only 7 large native mammals, 3 large domesticated plants are represented among the 103 folk taxa featured in O'odham oral literature.

These numbers suggest that O'odham mythology is not merely focused on creatures that are conspicuous or have economic importance but extends to a wide range of local and extralocal biota. (p. 235)

These examples and arguments aside, what I wish to show now is that Thai classical poetry (court poetry) from the Authaya period is both a continuation and a departure of the biophilia tendency in Southeast Asian culture. The Authayan Thai (Siamese) poet was urbanized to a very high degree. Yet he or she was not all that divorced from the small-scale agriculturalist that formed the economic base of the 15th century Siamese world. The very large repertoire of biological knowledge possessed by the community of urban Thai poets working in this particular genre and time period was probably a close reflection of, indeed recording of, the knowledge of their rural cousins. Nabhan and St. Antoine note that this type of agriculturalist has maximum categorized information on biological life, reflected in the lengthy lists of the early Thai court poets.

The lexicons of small-scale farmer-forager societies tend to contain a greater number of binomial labels for plant taxa than do those of hunter-gatherer societies, suggesting that farmer-foragers give greater attention to the morphological and behavioral detail of local species, whether wild or cultivated. The depth of folk taxonomic knowledge in a cultural community is not, however, static; like biodiversity, it can be affected by social and environmental forces which change through time. (page 232)

Biophilia in the Poetry of the Early Bangkok Period

Bangkok was established in 1772, nineteen years after the sacking of Ayuthaya by the Burmese. Nineteen years later, the most famous poet of the Early Bangkok Period, the period of the Four Reigns, from Rama I to Rama IV, was Sunthorn Phu (1786-1855). His father was a native of Rayong, his mother came from Phetchaburi. His parents did not get along and separated early, his father retiring to the life of a monk in a monastery in his birthplace. Sunthorn Phu's childhood and adolescence was spent with his mother, who was a wet nurse to a

princess in the Rear Palace. He was educated in Wat Sri Sudaram in Bangkok, where princes were schooled as well. When he was about twenty, he wrote his first story in verse, dedicated to a prince. By the time he was thirty-five, he had entered the royal service during the Second Reign. Essentially he was an urban and palace creature with country and common connections. His poetry reflects both the city-courtly life and the rural and vegetational. He wrote many travel poems, called nirat. Lines from his poetry illustrate the presence and continuity of biophilia in Thai poetry and the persistence of nature and poetry in the lives of the Thais. The following excerpt is taken from a translation of Nirat Phukhaow Thong.\(^{10}\)

> When the moon rises, I see clusters of water chestnuts
> And plenty of waterlilies.
> I discern waterways on both sides.
> We push with poles at front and stern.
> Towards dawn, I see plants.

> They look lovable and delicate, sending forth pollen,
> The phýân lotuses growing lush beside the path,
> Kam kung\(^{11}\) in overlapping layers,
> crowding the sârâây beneath the water;

> saay tîn alternating with tabtao\(^{12}\)
> In clusters seen in rows to the left and right;
> Water chestnuts, water lettuce, and lotus blossoms full blown, scattered white like glistening stars.

> Oh, if the girls come and see this,
> They will descend to play in the meadows;
> Those who have little boats will float and paddle about,
> Pulling stems of phán lotuses and sântâwaa plants\(^{13}\)
> How could I keep still before these flowers?

The poet has a very strong reaction when he witnesses the vegetation and flowers in the flooded rice fields; call it a demonstration of biophilia. Phya Anuman’s explanation (in an essay on growing rice) was, “These are lines in admiration of fields in the wet season by Sunthōcn Phûu, showing that the fields also have a distracting beauty if one has a poet’s eye to see.”\(^{14}\)

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\(^{11}\) Lit. ‘prawn’s claws’ *Begonia obovoidea*.

\(^{12}\) Lit. ‘turtle’s liver’. The ‘turtle’s liver mushroom’ was mentioned in the song quoted earlier from *The Capital*.

\(^{13}\) sântâwaa is *Ottellia alsimoides*.

\(^{14}\) See fn. 10.
The Bioform Catalogs of Thai Classical Poetry: *The Tale of Prince Samuttakote*

One of the remarkable features of Thai classical poetry is the listing of names of flora and fauna. At least two of the older Thai classics, *Phra Law* and *The Tale of Prince Samuttakote*, are replete with this phenomenon. An Anonymous epic, *Phra Law* dates from the early Ayutthaya period, ca. 1448-1533. Cambodian influences were very strong during this time, and the language of *Phra Law* has been described as "a mixture of the language of Sukothai and the Khmerized Thai of Ayutthaya. Hudak\(^\text{15}\) (1993:xiii) remarks that during this period, "Cambodian *kaap* and Indic *chan* meters became the favorites of the court and the intelligentsia, the educated and the learned audiences for poetry." The predilection to use catalogs of trees, flowers, fish, fowl, and animals (elephants in particular) as a literary device in both literary classics might well have been inherited from Khmer and Indic sources by the early Thai poet as well.

*The Tale of Prince Samuttakote* was begun during the reign of Prince Naray (1656-88), subsequent to *Phra Law*. It was enlarged by two later authors over a period of 150 years and completed in 1849. It is composed of 2221 stanzas, each of which has 2-4 lines of rhyming verse. Based on a Jataka tale, the more elaborate epic changes some of the content while retaining the original outline of the story. Some aspects are reminiscent of the Rama epic; it is a marriage contest that involves an elaborate elephant hunt (supposedly a reflection of Prince Naray's prowess), a marriage contest testing the ability of suitors to draw the iron bow, a battle with the losing suitors, marriage, separation of husband and wife, and their reunion. Very much in keeping with Indian traditions, the hero and heroine make visits to the Royal Gardens, the Himaphan Forest, and the Chattan Ponds, natural settings bursting with natural life that are inventoried in those portions of the poem. In the explanatory notes to his English translation of the poem, Hudak notes (fn. 142):

> Within descriptive passages appear various kinds of catalogues. The simplest type involves the listing of flowers, trees, or the like in no particular order, although sound play helps to order the terms. A slightly more sophisticated list, as in this example, lists the terms in rhyming or alliterative sequences. No special patterns of rhyme or alliteration dominate the following catalogue. Since sound aesthetics are an important part of all catalogues, the listed items have been left in their Thai forms in this translation.

TABLE 1. Catalog of Plant Life: Grasses, Trees, Flowers, Vines 16 (114 items)

<table>
<thead>
<tr>
<th>Mon–Khmer</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>ក្រូឈឺ /kliən/</td>
<td>a species of grass</td>
</tr>
<tr>
<td>ក្រូឈឺ - a species of grass</td>
<td></td>
</tr>
<tr>
<td>ប៊ូតុ /phoo/</td>
<td>Bho tree - under which the Bhudda attained enlightenment</td>
</tr>
<tr>
<td>ស្រួត : ប៊ូតុ, បូតុ, ប៊ូតុ /sâmít</td>
<td>&quot;He offered three leaves with blossoms&quot;—probably a reference to three special leaves (samit) used in ceremonies, especially those involving the king. These leaves include leaves of the mango, leaves of the flame of the forest, Butea frondosa (Leguminosae), and the leaves of the takob, Flacourtia cataphracta (Flacourtiaeae)</td>
</tr>
<tr>
<td>ក្រាម /kʰɛːm/</td>
<td>a species of tall grass sometimes used as a fodder, Sorghum halapense (Gramineae)</td>
</tr>
<tr>
<td>ក្រាម (ប្រាម) /dūu, prâduu/</td>
<td>a large, beautiful timber tree, Pterocarpus macrocarpus (Leguminosae)</td>
</tr>
<tr>
<td>ដី /pru/</td>
<td>pru - a scented hardwood used for medicinal purposes, Alangium salvifolium</td>
</tr>
<tr>
<td>ផ្រូវ /prayon/</td>
<td>prayon - a flowering tree, Aglaia odorata</td>
</tr>
<tr>
<td>យ៉ូ /yom, máyom/</td>
<td>yom/mayom - the star gooseberry, used in purification rituals, Phyllanthus distichus-euphobiaceae</td>
</tr>
<tr>
<td>សាយី (សុរ៍) /sâráphi, sûráphi/</td>
<td>sarapi (also surapi) - sweet scented flowers, Ochrocarpus siamensis</td>
</tr>
<tr>
<td>ងូ /phikun/</td>
<td>phikun - small, star shaped, sweet smelling flowers, Mimusops elengi (Sapotaceae)</td>
</tr>
<tr>
<td>កង្កាម /kaancànámûan/</td>
<td>kanchanamuang - golden mangoes</td>
</tr>
<tr>
<td>មាសី /monthaan/</td>
<td>monthan - a large leafed tree with yellow flowers believed to grow in heaven</td>
</tr>
</tbody>
</table>

16 Transliterations of Thai names of biodata, their English definitions and Latin names are taken with very few modifications from the footnotes to Thomas Hudak’s annotated translation, The Tale of Prince Sammutiatkote. On the line above his transcribed form, I have inserted the original Thai spelling and a phonetic transcription of a spelled pronunciation. My list of approximately 300 life forms, culled from the footnotes to the translated poem and rearranged into three categories (plants, birds, fish), does not include the elaborate catalog of elephant types that fill the scenes dealing with the elephant hunt and battles. Any errors in the transcriptions should be attributed to me.
kamywan /kamywan/
kamywan - a tree yielding fragrant gum resin, *Styrax benzoides*
จััก /jambok/
jambok - *Buchanania fastigiata*, *Amygdalicera stipulata*, or *Irvingia harmandii*
จาณิกา /kanika/
kaanika - a tree with sweet-smelling white flowers, *Nyctanthes arbor-tristis*
แก้ว /kaew/
kaew - a tree with fragrant white flowers, *Murraya paniculata*
การัก /karaktet/
karakate - the screwpine, *Pandanus furcatus* (*Pandaceae*)
เกต /ket/
ket - palu, hardwood timber, *Mimusops hexandra*
มะลิ (มะลิ) /malii/
mali - jasmine, *Jasminum sambac* (*Oleacea*)
แมกุลูด /maaludii/
maludi (maluli?) - a type of tree
บัณฑิต /bunnaak/
bunnak - Indian rose chestnut, *Mesua ferra* (*Ternstromiaceae*)
มะลิวาน /malivian/
maliwan - jasmine
วานนาوان /wannawan/
wannawan - hibiscus (?) *Hibiscus rosa-sinensis*
นางเยี่ยม /nanyeeem/
nangyaem - a shrub with fragrant flowers, literally the name means 'a woman slightly open', *nang* 'woman' and *yaem* 'slightly open', and therefore frequently appears as an image in erotic passages, *Cleredendron fragans*
ข่า /khathin/
khatoeng - a tree with reddish brown bark, *Calophyllum inophyllum* (*Guttiferae*)
ลำดวน /lamduan/; ระดวน /ramduan/
lamduan (or ramduan) - a tree with three-petaled strongly-scented flowers used as offerings to Buddhist monks, *Aphaerocoryne clavipes* (*Annonaceae*)
ซิก /cik/
jik - a tree or shrub with leaves used medicinally, *Barringtonia spicata* (*Myrtaceae*)
แพง /ceey/
jaeng - a type of tree, *Niebuhria decandra* (*Capparidaceae*)

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17 The use of the "?" means that Hudak is unsure; in many instances, he writes "a type of something" in the definition, perhaps as an indication of inexact or lost knowledge. For a fascinating account of language and knowledge decay, see Allan Pred's *Lost Words and Lost Worlds: Modernity and the Language of Everyday Life in Late Nineteenth-Century Stockholm*, 1990, Cambridge: Cambridge University Press.
maeng (maenglak?) - sweet basil, *Ocimum basilicum* (Labiatae)

mongkhut - the mangosteen, *Garcinia mangostana*

khuy - a kind of crepe used as a red dye

khlu - a small bush, *Pluchea indica* (Compositae)

khlay - a type of tree

monnak (nakkbut ?) - a moderate-sized tree with large white flowers, *Mesua ferra* (Guttiferae)

rakkluy - bananas, *Gyrinocheilus koznokovi* (Cyprinidae)

phuttan - hibiscus, *Hibiscus mutabilis* (Malvaceae)

asok - the asoka tree, native to India, *Saraca indica* (Leguminosae)

krisana - a large tree with fragrant resin often used as incense, *Aguilaria agallocha* (Thymelaeaceae)

krawan - cardamoms, *Amomum xanthioides* (Zingiberaceae)

karabun (or kanbun) - a low-blooming annual, *Sphaeranthus indicus* (Compositae)

kun (kala ?) - a tree with white flowers found on banks of streams, *Hydnocarpus castanea* (Bixaceae)

kraniat - *Adhatoda vasica* Nees

kamkhun (kun?) - plant with clusters of yellow flowers, *Cassia fistula* (Leguminosae)

suhankaa - *Cochlospermum Cochlospermaceae*

pake - a tree with large pods, *Oxystylum indicum* (Begoniaceae)

rang - small tree upon which a lac insect feeds, *Pentacme siamensis* (Dipterocarpaceae)
รัก /rák/
rak - a tree from which laquer is obtained, *Melanorrhoea usitata* (*Anacardiaceae*)
ลำธารา /sàkhhràrā/
sakraw - a tree used for medicinal purposes
จริง /càrálīŋ/
jaraling - *Averrhoa bilimbi*
หน /kòk/
kok - umbrella plant, *Cyperus alternifolius*
รามไย /ramyay/
ramyai (lumyai ?) - *Nephelium longana*
ไฟ /phay/
phai - type of tree used in building, *Adenanthera microsperma* (*Leguminosae*)
พ้อ /phoo/
pho - pipal tree, *Ficus religiosa* (*Urticaceae*)
เทปะรู /thèepthaaru?/
theptaru - a peppermint smelling pine, *Cinnamomum parthenoxylon*
ลำปู /lamphuā/
lampu - tree with fruit for flavoring chutneys and curries, *Sonneratia caseolaris* (*Sonneratiaceae*)
ตอบแตก /tòpːtèek/
tongtaek - shrub, *Baliospermum axillare* (*Euphorbiaceae*)
ตาตุ้ม /taatùm/
tatum - small tree with milky juice, *Excoecaria agallocha* (*Euphorbiaceae*)
รัก /rákam/
ramak - a palm, *Zallaca wallichiana* (*Palmae*)
ราชพฤกษ์ /rācháphrīk/
ratchaphrik - laburnum, golden shower, *Cassia agnes* *Brenan*
จันนา /khāanaan/
khanang- *Homalium tomentosum*; khanang also means 'arms of a lady'
รักส่อง /ráksōŋ/
raksorn - shrub with double-petaled flowers, *Calotropis gigantea* (*Asclepiadaceae*); raksorn also means 'love increases'
เขียนanga /lēpnāan/
laepnang - woody climber, *Quisqualis densiflora* (*Cembretaceae*); laep [lep] nang also means 'fingernails of a lady'
ลำจิ้ก /lāmčīāk/
lamjikak - species of screwpine, *Pandanus tectorius* (*Pandanaeaceae*)
จันทร์ (จันทร์) /can/
jan - sandalwood, *Sirium myrtifolium*
มัลิกา /mállīkāa/
malika - double jasmine
kumari /kùmaarii/
kumari - an unidentified species of flower
พื้น /phláp/
phlap - evergreen, *Diospyros embryopteris* (*Ebenaceae*)
ควระ /tràkhòp/
trakop - berry producing tree, *Flacourtia cataphracta* (*Flacouriaceae*)
ชุม /khanûn/
khanun - jackfruit, *Artocarpus integrifolia* (*Urticaceae*)
ชามชุน /chaamchun/
chamchun - an unidentified species of fruit*
ชีวิตร /khwât/
khwit - wood apple, *Feronia elephantum* (*Rutaceae*)
ขาวต /khwât/
khwat - evergreen tree, *Garcinia speciosa* (*Guttiferae*)
ไม้เที้ยง /màiûn/maïûn
mayhiang - *Dipterocarpus intricatus* (*Dipterocarpaceae*)
ชาระน /charâhàn/
charahan - an unidentified species of tree
มหาต /mahâat/
mahat - a large deciduous tree, *Artocarpus lakoocha*
ไผ่ /máiphây/
bamboo - *Bambusa arundinaceae*
ปง /bôny/
bong - bamboo, *Bambusa touda*
ช่างง /chàânyaàny/
changyang - an unidentified species of bamboo
อันชัน /lânchân/
anchan - blue climber; has prominent blue flowers and is found throughout the
tropics; *Clitoria ternatea* (*Leguminosae*)
สุมาล /sùmaalii/
sumali - a flower, a collection of flowers
บาง /kaan/
kan (kala) is dark blue-green like the anchan flower
จั่งนี /conkonnii/
jongkonni - a lotus that bears multiple white blossoms per stem
อุบล /lubon/
ubon - a white lotus
นิล /nin/
nin - a blue lotus
โลหิต /lõõhìtoo/
lohito - a red lotus
Bioforms and biophilia in Thai poetry

patthama - a lotus, *Nelumbium speciosum*

sawet - a white lotus

kamut - a long-stemmed white lotus

rak - *Calotropis gigantea* (Asclepiadaceae); rak also means 'to love'

sala - a short-stemmed palm, *Zalacca wallichiana* (Palmae); sala also means 'to relinquish, renounce'.

rakam - *Calotropis gigantea* (Asclepiadaceae); rakham also means 'sorrow, grief'

kratum - a species of evergreen, *Excoecaria agalloch* (Euphorbiaceae); a modification of the first syllable kra to kara produces the meaning 'hands' with the whole word meaning 'to beat the chest with the hands'

sok - the tree under which Buddha was born, *Saraca indica* (Leguminosae); sok also means 'sorrow'

phanlawk - a tree that probably produces a fire-red flower.

sayyut - fragrant climber, *Desmos chinensis* (Annonaceae); reversing the syllables, the meaning is 'to stop in late morning'

sukkrom - a tree with red fruit used for medicine; reversing these syllables produces a homonym krom 'to be melancholy' and suk 'happiness' which is negated in the Thai

sathorn - *Milletia buteoides* (Leguminosae); sathorn also means 'to recoil'

thingthotn - *Albezia procera*; thing means 'to throw away'

rok - probably a woody sprawler, *Terminalia alata* (Combretaceae); a homonym means 'disease'

kanphay - *Afgekia sericea* Carib; split into two syllables, the two syllables mean 'to protect against (kan) danger (phay)'
มน /märum/
marum - horseradish tree, *Moringa oleifera* (*Moringaceae*); the second syllable means 'to gather, flock together'.

ก้าง /kamchát/
kamjat - *Zanthoxylum budrunga* (*Rutaceae*); kamjat also means 'to limit'

มะวก /mákèk/
makawk - hog plum, wild olive, *Spondias pinnata* (*Anacardiaceae*); the second syllable, kawk, means 'to suck'

จา /càak/
jak - nipa palm, *Nipa fruticans*; jak also means 'to be separated from'.

เหลี่ยง /tér/
teng - a large forest tree, *Shorea obtusa* (*Dipterocarpaceae*); teng also refers to a type of Chinese scales with a horizontal bar.

มะไฟ /máfó/
mafaw - *Trewia nudiflora*; faw means 'to be withered or wilted'.

สบ่า /sabàa/
saba - elephant creeper, *Entada phaseoloides*; ba means 'to be crazy'

รำเนิง /ramgap/
ramngap - *Mimosa pudica* (*Leguminosae*); ramngap means 'to curb or lessen'

นาต /nàat/
nat - camphor plant, *Cluemia balsamifera* (*Compositae*); a homonym, anat, means 'to be destitute'

วั้น /wànnám/
wannam - creepers; wan has a homonym meaning 'day' and nam means 'water'

ดัพพิท /dàpphít/
dapphit - phitsanat - *Mimosa sirissa*, used as an antidote against poisoning; dap means 'to extinguish and phit means 'poison'

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**TABLE 2. Birds** (76 items)

กุ่ก /kùńok/
kungok - a peacock

กุวาน /kùńaan/
kungan - a goose, *Cygnus*

กุญจน /kùńcón/
kungon - white ibis, *Ibis milanocephala*

จิบ (กะจิบ) /kràcip
jip (krajip) - warblers or wrens; jip also means 'to swallow a little at a time'

จับ (กะจับ) /càap, kràcàap/
jap (krajap) - weaver bird, *Ploeceus Baya*; jap also means 'to rob or steal'
klingklong - black necked mynah, *Gracupica nigricollis*

Jaw (krajaw) - a type of heron; jaw also means 'to sit quietly'

Krása - common heron, *Ardea cinera*

Rangnan - a species of bird

Nangnuan - sea gull, sea terns, *Sterna sp.; nang also means 'lady' and nuan 'creamy skin'

Kanaáam - cormorant, *Phalacrocorax sp.; the kanam is a symbol of gluttony*

Petnam - whistling teal, *Dendrocygna javanica.* The repeated use of the word nam 'water' in the bird's name and in the description of their actions in the water helps to produce a rhyming effect in the Thai.

Nghua - *Anhinga melanogaster* (Phalacrocoracidae)

Khaw - Malay spotted dove, *Turtur tigrinus*

Ten - kingfisher, *Alcedinidae*

Krànay, tranay - (or tranay) a small bird similar to the woodpecker

Huakhwan - scaly belly green woodpecker, *Gecinus vittatus eisenhoferi;* huakhwan also means 'head of the axe'

Plaw - turtle dove, *Aenopopelia tranquabarica humilis*

Sarika (or sari ?) - mynah, *Acridotheres tristis*

Prik - watercock, *Gallicrex cinereus*

Aen - ashy swallow, *Artamus fuscus; aen also means 'to bend'*

Sangsaew - a common bird with black plumage, the king crow, *Buchanga atra*

Phay - a species of bird
lang (kalang) - Siamese white-crested laughing thrush, *Garrulax diardi*
pling - an unidentified species of bird
bawkhun - a species of bird; *bawkhun* also can mean 'a young nobleman'
kangkhen - a species of magpie, *Copsychus saularis*; *kangkhen* also can mean 'shield'
khwaek - night heron, *Nycticorax nycticorax*
ilum - watercock, *Gallicrex cinera*
кум /khûm/
hum - small quail
say - an unidentified species of bird
huahang - an unidentified species of bird
yung - Burmese peafowl, *Pavo muticus*
sæk - collared pygmy owlet, *Glaucidium brodiei*
เข็ม /khâw/
khâw - collared pygmy owlet, *Glaucidium brodiei*
คำ /khâpkheê/
khâpkheê - cotton teal goose, *Nettapus coromandelianus*
yang /yaan/
yang - Indian pond heron, *Ardeola grayi*
กวํ /kwâk/
kwâk - Chinese white-breasted water rail, *Amaurornis phoenicurus chinensis*;
*kwâk* also means 'shake, wave' and also represents the sound the bird makes
phráhit /phráhít/
phráhit - an unidentified species of bird
จํา /càak/
jak (wak) - a mythological bird said to wail at night when separated from its mate;
the name may also be translated as 'separated from'
topyung - *Caprimulgidae*; the name can also mean 'to slap mosquitoes'
nokkajok - common sparrow, *Passer sp.*
คัญรpiry /khê̄̄̄̄n>vôuy/
khonhooy - *Pelican ibis, Tantalus leucocephalus*
กุ้ง dok /phûráddok/
phuradok - an unidentified species of bird
โคกม่า /khôokmâa/
kokma - a species of bird
เกล็ก /kôtphlœoy/
kotchloeng - black-necked stork, *Xnorhynchus asiaticus*
ช่างเหล็ก /chânJlék/
changlek - Indian crimson-breasted barbet, *Xantholaema haemacephala indica*.
The changlek bird makes sounds similar to its name, 'lek, lek'. The bird's name also means 'blacksmith', a person that makes similar sounds striking iron.
กระบาน /krâwaan/
krawaan - black racket-tailed magpie, *Crypshirina varians*
กระบวน /krâwbéen/
krawen - black racket-tailed magpie, *Crypsirhina varians*.
ชนишь /khamin/
khamin - babbler, *Mixornis rubicapella minor*
กวิก /karâwik/
karawik (nanwika?) - a melodious bird of fairyland whose songs entrance the spirits and deities of the forest. The Indian cuckoo is referred to by this name.
กรุนจ /kroncaa/
kronca (or konca) - sarus crane, *Grus antiquae*
ก็ัส /kookin/
kokin - cuckoo or coel, *Eudynamis malayana*
กัวรียน /kàrian/
karian - crane, *Grus sharpi*
ยางทอน /yaânthoon/
yangthon - little egret, *Egretta garzetta garzetta*
ข้ำปค /khâpkhee/
khapkhae - cotton teal goose, *Nettapus coromandelianus*.

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18 McFarland's *Thai-English Dictionary* records four variant spelling: /kraween, kawseen, kraween, traween/ กวีน, กวี, กวี, กวี. A close examination of different version of the poem would probably show many variant spellings—a reflection of dialect variation, such as the /ûrk/ and /œ/ in the Thai spelling in this instance, and the general absence of standardized spelling until modern times. It should also be borne in mind that the most authoritative published editions of the poem (1979, 1980: Krom Silapakorn) that Hudak based his translation on are not critical editions. Hudak states (p. XXVI): "As such, the third edition [1979] is not a critical edition since no critical apparatus has been used to solve textural problems. While spelling has been modernized in some cases, spelling errors still remain and frequently hinder comprehension."
khaecktaw - a species of parrot; *khaecktaw* could also mean 'guest comes'
langling - a small medium-sized palm, *Pinanga*; langling also means 'kinds of
monkies'
thengthut - a kind of bird; thengthut also means 'to call out a message'
hongsa - a goose or swan
suwa - a species of parrot
kukut - jungle cock
kunala - Malayan coel, *Eudynamis malayana*
jackphrak - a mythological bird with a wailing sound at night when separated from
its mate; the words also mean 'to be separated from'
phirap - a kind of dove, *Columbidae*; a rhyming syllable means 'to lament'
thengthut - a kind of bird; *theng* [thing] means 'to throw out' and *thut* means 'message'
khawmong - owl, *Glaucidium cuculoides*; mong means 'time' [daylight]
khawkun - a type of owl; *kun* means 'to call out'
sein - *sëek*
saek - a type of owl, *Tyto alba*; saek means 'to make clear'
khwaekkhwan - a heron; *khwan* means 'ax'
rangnan - *ranjnaan*
rangnan - a species of bird; *nan* means 'a long time'
lang - Siamese white-crested laughing thrush, *Garrulax diardi*; lang means 'a sign of destiny, an omen'
nori - a parrot-like bird, *Loriidae*
khaektaw - a species of parrot, *Psittacidae alexandre* (Psittacidae)
benjawn - a multi-colored parrot.
Kayfa - silver pheasant, *Euplocamus lineatus*; fa means 'sky, heaven'

<table>
<thead>
<tr>
<th>TABLE 3. Fish (94 items)</th>
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- กระโกร /krakhōo/
- kraho - giant carp, *Catlocarpio siamensis*
- กระเอ /krahe/
- kraehae - edible water fish, *Puntius schwanefield*
- ว้า /wua/
- wua - perhaps the seacow, *Halicore sp.*
- กรม /krim/
- krim - small fish similar to the fighting fish, *Ctenops vittatus*
- กราย /kraay/
- kray - featherback, a freshwater fish, *Notopterus chitala* (Notopitidae)
- สาว /sawāy/
- saway - *Pangasius fowleri* (Pangasiidae)
- คงเหนือ /khaŋbian/
- khangbuean - freshwater catfish, *Belodontichthys dinema* (Siluridae)
- คาร /khāaw/
- khaw - catfish, *Wallago attu*
- สะลิ /sailī/
- salit - *Trichopodus pectoralis* (Anabantidae)
- โพ /phoo/
- pho - freshwater fish, *Drepane punctatus*, *Tor stracheyi*
- พร /phruan/
- phruan - freshwater fish, *Labeo proul*
- เขาใหญ่ /khēemaakrooy/
- khemakroy - a fish with a black back
- น้ำมันจั่ง /nāamlān/
- namlang - *Amblyshynchichthys truncatus* (Cyprinidae)
- หัวทอง /hūālān/
- hualuang - an unidentified species of fish
- พร /phraam/
- phram - a species of fish
- สุนพบน /salūmphōoŋ/
- salumphon - a fleshy fish
- พระ /phluan/
- plu昂 - a carp, *Labeobarbus soro* (Cyprinidae)
phrom - *Osteocheilus melanopleura* (Cyprinidae)

phlaphleen - an unidentified species of fish

thong - *Parasilurus*

kantong - spear fish, *Istiophorus* sp. (*Istiophoridae*).

henglen - an unidentified species of fish

kaboro - (kraboro) sea mullet, *Mugil tade*

kabon - ray or skate, *Raia*

theep - *Pangasius larvaludil* (*Pangasiidae*).

chado - serpent-headed fish, *Ophicephalus micropeltes* (*Ophicephalidae*).

kaemcham - freshwater fish with bright red cheeks, *Puntius orphoides* (*Cyprinidae*); *kaem* means 'cheeks' and *cham* means 'to kiss'.

maow - *Anabas testudineus* (*Abanaptidae*).

maew - *Thryssa, Sepipinna, Lycothrissa crocodilus*

linmna - *Cynoglossus borneensis*

mu - *Acanthopsis choiorhynchus* (*Cobitidae*).

kotchara - an unidentified species of fish

rahu - *Mobula Mobulidae; rahu* is also the mythological monster of the moon that devours it during an eclipse.

janthamet - butter fish, *Stromateus*; *janthamet* means 'to devour the moon'.

tharamang - an unidentified species of fish

wan - a whale.
taatum /taatûm/
tatum - small whale, *Puntius bulu* (*Cyprinidae*); the name *taatum* can also mean 'protruding eyes'

chon /chöon/
chon - loach, *Lepidocephalus hasselti*

kathing /kæthiŋ/
kathing - spring eel, *Mastacembelus armatus*

aw /lāaw/
aw - *Luciosoma harandi* (*Cyprinidae*)

ma /mâa/
ma - a seahorse (?)

klang /khaan/
klang - an unidentified species of fish

ka /kхаa/
ka - a freshwater fish, *Morulius chrysophekadion*; also catfish, *Mystus micrancanthur*

heera /hēeraa/
heera - a fabulous marine creature

soy /sɔoŋ/
soy - *Dangelia leprocheila* (*Cyprinidae*)

fakphra /fàkprâa/
fakphra - a bean, sword, a river fish, *Chelaoxygastroïdes* (*Cyprinidae*)

sa /sâa/
sa - an unidentified species of fish

suea - *Toxotex jaculator*

sup /sùup/
sup - freshwater fish, *Hampala macrolepidota*

khuea - goby fish, *Apocryptes serpaster*

hangkiw /hāaŋkiw/
hangkiw - species of saltwater fish, *Caranx mate* (*Carangidae*)

kuraw /kùraw/
kuraw - thread-thin fish, *Eleutheronema tetractyllum*

kanaek - an unidentified species of fish

kot /kòt/
kot - catfish, *Mystus micrancanthus*

mukham - *Boita cobitidae*
siw /siw/
siw - small edible fish, *Rasbora retrodorsalis* (Cyprinidae)

krati /kràذي/
kradi - freshwater fish, *Trichopodus trichopterus*

kratrap /kràตระป /
kratrap - freshwater fish, *Pristolepis fasciatus* (Nandidae)

chorn - serpent-headed fish, *Mujrrel*

chawat /chawâต/
chawat - an unidentified species of fish

chawee /chawee/
chawee - an unidentified species of fish

thuñ /thúañ /
thuñ - species of saltwater fish

phueng - *Gymocheilus kaznakovi*

pañ /pañ /
pañ - *Leiognathus dussumieri*

paep - *Paralaubuca typus* (Cyprinidae)

jwat /jwat/
juat - saltwater fish, *Johnius belengeri* (Sciaenidae)

lot - *Mastacembelus circumcinctus* (Mastacembelidae)

morm - an unidentified species of fish

chalam /chalam/
chalam - (or chalam) - shark, *Scoliodon palasorrah*

krâłumphûk /krâłumphûk/
kralumphus - shad, *Hilsa Alosa toli*

duk /duk/
duk - freshwater catfish, *Clarias batracus* (Clariidae)

daeng /deéng/
daeng - white catfish

khayaen /khayaen/
khayaeng - catfish

oû /oûk/

ok - *Hemipimilodus borneensis*

tamphan /tamphan/
amphan - an unidentified species of fish
กุ้ง /kùŋ/
kung - shrimp
กั้ง /kâŋ/
kang - mantis shrimp
กุ้มภิส /kùmphín/
kumapin - long-nosed alligator
มำก /màkən/
makorn - a mythical fish
สลัด /salàat/
salat - featherback, Notopterus notopterus
ปู /bùu/
bu - gobies, Glossogobius giuris (Gobiidae)
ปลา /bâa/
ba - Leptobarbus hoeveni (Cyprinidae)
สั้งควาว /sâŋkhâwâaat/
sangkhawat - Pangasius pangasius (Pangasiidae)
แมลงปู /mâlêngphûu/
malaengphu - a type of mollusk
จระเข้ /chanâak/
chanak - sawfish, Pristis perotteti
เทป /thêephaa/
thepa - freshwater catfish, Pangasius santiongsei (Pangasiidae)
กระเพา /trâphââk/
trapak - Puntius daruphani
เพชร /cháadoo/
chado - serpent-headed fish, Ophicephalus micropeltes (Ophicephalidae)
กระดง (กระดง) /krâodoŋ, kàodoŋ/
kradong - an unidentified species of fish; kradong means 'the spine of a fish or ship mast'
กวง /kâɾâkòt/
karakot - crab
กังห=user /kâŋhâpáʔ/
katchaba - tortoise
จิ้ว /cariw/
jariew - turtle
จารว /caraaw/
jaraw - sea turtle

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Mon-Khmer Bioform Borrowing into Thai (Siamese)

In scanning the foregoing list of over 300 bioforms, it is safe to assume from word shapes alone that many are borrowings from Khmer. Perhaps the heavy borrowing should not come as a surprise, considering the fact that the form of the poem is Khmer in origin too. Even taking that into account, the fact remains that as the Thai moved out of South China and into Mon-Khmer areas of Southeast Asia, they encountered a new environment and civilization and borrowed new words along with the new Mon-Khmer culture. Indeed, the Thai writing system is a borrowing and adaptation of Khmer script.

To illustrate the degree of borrowing of terms for bioforms, examine the last list in this paper, the ninety-four fish. In her masterful study of Khmer elements in the formation of Thai (Siamese), Uraisi Varasararin lists a sampling of just nine Khmer names for fish that have been borrowed into Thai; all nine are found in the poem, *Samutthakhōot Kham Chân*. They are shown below, this time with their Khmer reflexes, as given by Uraisi Varasararin (1984:233-234). Of the remaining eighty-five fish named in the poem, easily the majority are Khmer script.

กิริม /krim/ from Khmer /kryn/
krim - small fish similar to the fighting fish, *Ctenops vittatus*

กรา/ /kraa/ from modern Khmer /kraay/

กราย /kray/ - featherback, a freshwater fish, *Notopterus chitala* (*Notoperidae*)

กราย- /sawāay/ from middle or modern Khmer /svaay/
saway - *Pangasius fowleri* (*Pangasiidae*)

พราน /phruan/ from modern Khmer /pruuel/

พราน - freshwater fish, *Labeo pruol*

เขมราคย /khēemaakrooy/from Khmer /khmau/ 'black', /kroy/ 'back'

เขมราคย - a fish with a black back - *Alosa kanaguerta* (*Clupeidae*)

สลาด /salàat/ from modern Khmer /slaat/

สลาด - feather back, *Notopterus notopterus*

ชัด /cháadoo/ from modern Khmer /cdaoO/

ช้อ - serpent-headed fish, *Ophicephalus micropeltes* (*Ophicephalidae*)

ผลานยู (ผลาน) /chalāamnūu, chalāam/ from modern Khmer /claam/

(or chalam) - shark, *Scoliodon palasorrah*

ท้าปี /tàphian/ from middle or modern Khmer /cpùn/
taphian - species of carp - *Puntius sp.*

Conclusions

By now it is a commonplace to remark that rapid modernization in the tropical regions of the world has accelerated the rate of deforestation and the
extirpation of plant and animal species. Southeast Asia is not an exception. What evolved over millennia as "vegetational civilizations" (food, clothing, housing, tools, derived largely from plant sources) are now competing to become industrial, urbanized societies.

This paper has attempted to show that there has been a remarkable continuity in the Thai attitude toward nature as reflected in Thai literature, from the earliest poetic narratives written in classical meters down to the poetic lines of simple folk songs. Because of the richness of Thai tropical nature—noted in the very earliest historical inscription attributed to King Ramkhaeng: "nay náam mii plaa; nay naa mii khâaw" [in the waters there are fishes; in the fields there is rice]—the Thai, regardless of their state in life, could not help but be confronted with tremendous diversity of life forms, that we, as outsiders, stand in awe of and label "exotic." So it is not surprising to see Nature's fecundity represented in Thai verbal arts.

What is remarkable is the degree of saturation of bioforms in the poetic arts. In the particular piece of classical Thai verse cited in this paper, there are roughly 300 named species of trees, flowers, plants, and fishes interwoven in the narrative text as "catalogs" of bioforms. One way of explaining their function is to employ the notion of biophilia, the emotional/aesthetic response of the poet towards nature. To be able to craft these gems of the verbal art, whether in the form of classical verse or a regional folk song, the poet has to be a biophile of extraordinary experiential knowledge, living close to the natural life forms he writes of so lyrically. The same holds true for his audience.

As the Thai tropics are denuded and the rural Thai move increasingly into urban centers, the experience of biophilia so exquisitely captured in classical verse and folksong is thereby reduced as a meaningful enterprise. Looking into the future, we are not only facing the extinction of bioforms but the extinction of experience—of actually seeing with one's own eyes the taptaw mushrooms sprouting along the edge of the yaanang vines, or a sea of lotus blossoms (the very symbol of Buddhist teaching) floating on a marsh, or to hear and see the elusive bright-yellow khamin 'babbler', the subject of one of the oldest and most beautiful Thai lullabies.

The time has come for the poet and the politician to sit down together to seriously discuss the ultimate result of loss of bioforms—the loss of the experience that is the very basis of our evolution, intimacy with nature and the feelings that it

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20 Ramkhamhaeng Inscription No. 1 dates from 1283 A.D.
21 Not to mention the loss of whole languages. Mountain and forest dwellers comprise the greatest remaining diversity of languages and cultures, including indigenous knowledge of "forest products". For a discussion of this topic, see "The Death of Languages" in The Chronicle of Higher Education, April 20, 1994, page A8. According to the author, David Wheeler, "up to half of the worlds 6,000 languages will die out... in the next century." Wheeler also comments on the loss of verbal art: "Since many languages do not have a written form and have not been captured on linguists' tape recorders, countless forms of "verbal art" that stitch sound and meaning together are also being lost, including religious chants, rhyming verse, and songs of love and anger."
engenders and finds expression in the most fundamental of the human arts, namely the verbal arts. We desperately need to listen to the Southeast Asian poet-singer, be he or she Thai or Temiar.

Received: 18 April 1995.

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