CHAPTER 4

Notes on Faunal Terms in At Samart Saek[1]

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[要旨/ABSTRACT]

　本稿はタイ王国ナコンパノム県アッサマート村(Ban At Samart)で話される
セーク語(タイ・カダイ諸語)の動物相にまつわる語彙に関する記述と整理を
行う。

　これまで Chamberlain (1998)や Khanittanan (1975)など多くの言語学者が
セーク語の研究を行ってきたが、最も詳しいのは William Gedney の資料を整
理した Hudak (1993)である。本稿では筆者が 2013 年から断続的に行ってき
た現地調査から得た資料を整理し、動物相に関係する語彙(哺乳類・昆虫・両
生類・魚・鳥類)を記述した。現時点の記述はまだ非常に浅いものである。し
かしながら、結論としては、Hudak (1993)にみられない語彙(特に鳥類)が多
く記録できたことが成果である一方、Hudak (1993)にみられるデータとの食
い違いも若干みられることが判明した。

　また語形成に関しては動物類別詞である thua4 を用いた {thua4} + A + B の
構造をとることが基本である。このうち B は A に対する修飾語として位置づ
けられる。現時点では B は(i) メタファー、(ii) 生態状況、(iii) 生息域、(iv) 身
体的特徴などを指示することがわかった。

1. Introduction

1.1 The Saek Language

The Saek language is primarily especially spoken in the Nakhon Phanom Province of Thailand and the Khammouane Province of Laos.[2] This language is fairly well-known in Southeast Asian linguistics. There are many linguistic works on this language, such as Chamberlain (1998), Gedney (1970), Hudak

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[2] Chamberlain (1998) documented major villages speaking this language, and Hudak (2008) also detailed the Saek villages that can be found in Gedney's data and texts.

(1993, 2010), Khanittanan (1975, 1976, 2008), etc. Among these, William Gedney's descriptive work compiled in Hudak (1993) is the most comprehensive work on the Saek language of At Samart village in Nakhon Phanom, which most Tai historical linguists have referred to for linguistic reconstruction.

At Samart village is roughly 5km from the city center of Nakhon Phanom; therefore, many speakers of other languages inhabit the surrounding villages. As Gedney (1970) noted, the fluent speakers of At Samart Saek (hereafter "AS-Saek") have been decreasing for many decades. The author recognizes that the fluent speakers of AS-Saek should be over 70 years old. Most of the Saek people speak "Isan" Thai or Lao for everyday life and use Standard Thai at school.[3]

1.2 The Aim of This Paper, Fieldwork, and the Methodology

This paper tries to document faunal terms of AS-Saek by utilizing first-hand data, which have been collected in the author's fieldwork (2013-2018). The documentation of faunal terms in AS-Saek is an integral part of my project for describing a new and revised version of the glossary and a skeleton grammar of AS-Saek.
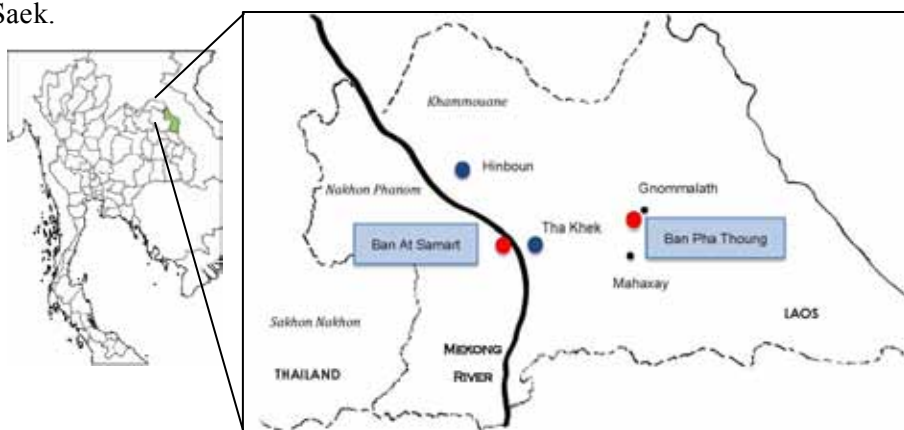
Map: Fieldsites of the Author (At Samart: Thailand, Pha Thoung: Laos)

Faunal terms are recognized as very important items in anthropology and ecological studies, but in the linguistic field very few studies have focused them. Among these, Chamberlain (1977) is the most extensive and features detailed analysis on Tai zoological terms from linguistic viewpoints, which has impacted many related works in Southeast Asian linguistics. Recently, Chamberlain released another important work that deals with faunal terms in Kri-Mol (Vietic) languages (Chamberlain 2018). More recently, Chamberlain illustrates novel and excellent ideas on the terms referring to python and snake in

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[3] The variety spoken in Ban Bawa of Nawa District in Nakhon Phanom Province is said to be still active, and even children can speak their mother tongue. The Research Institute for Languages and Cultures of Asia at Mahidol University has maintained a language revitalization project at Ban Bawa and made a Saek-Standard Thai dictionary in Thai script.

this area and beyond (2019a, b). In a study on Tibeto-Burman linguistics of Southeast Asia, Matisoff (2006) includes a comprehensive list of Lahu faunal terms, which should be referred to in the areal zoological linguistics of this region. Additionally, Matisoff (2011) provides an overall analysis of areal and universal issues in plant and animal nomenclature, which should be considered in the morphological descriptions of faunal terms. Additionally, Badenoch (2019) and Kurabe (2019) have also contributed data to Sida and Jinghpaw faunal terms, respectively, in this volume.

The author has conducted linguistic fieldwork[4] on AS-Saek on nine occasions since 2013 and gathered data on basic lexicon and syntax.The main language consultant was Ms. Subin Pholhaaraaj (born in 1924)[5], who is very fluent in Saek, Standard Thai, and Lao and belongs to the "younger generation" as coined by Gedney (Gedney 1970; Hudak 1993).

As for the elicitation of faunal terms in AS-Saek, the author showed photographic guides to Ms. Pholhaaraaj and recorded the AS-Saek terms she provided. The photographic guides the author used are as follows:

[a] Mammals: Francis, Charles M. 2001. *A Photographic Guide to Mammals of Thailand & South-East Asia: Including Thailand, Malaysia, Singapore, Myanmar, Laos, Cambodia, Vietnam, Java, Sumatra, Bali and Borneo.* Bangkok: Asia Books.
[b] Insects: Koike, Keiichi (et al. eds.) 2010.   Neo Pocket Kontyuu. [*Mini Photographic Guide to Insects for Elementary School Children.* (in Japanese)] Tokyo: Shogakukan.
[c] Birds: Davidson, Peter 2009. *A Photographic Guide to Birds of Vietnam, Cambodia and Laos.* London: New Holland Publishers.

Aikhenvald (2015) mentioned the effectiveness in eliciting faunal and floral terms in linguistic fieldwork, but the methodology of elicitation does vary from linguist to linguist.

Nathan Badenoch (pc.) advised me, however, not to use picture books, as they are more difficult for linguistic consultants to recognize than photographic guides.

One of the most useful elicitation methodologies for faunal and floral terms in linguistic fieldwork is to ask linguistic consultants to identify flora and fauna in the target language directly, in outdoor, natural settings, to take linguistic consultants outside and ask how they call them when finding them. It is certainly better than using books, though linguists typically have limited time for fieldwork, and it is very difficult to find faunal and floral items efficiently and systematically in outdoor, natural settings.

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[4] The author visited Ban Pha Thoung of Khammouane Province in Laos once (See Map) and interviewed an approximately 60-year-old woman for several words. Her speech still retained the final /-l/.
[5] The author appreciates her kind instruction in At Samart Saek. Any errors in this paper are, of course, the author's own.

On the other hand, showing photographic guides to linguistic consultants is quite effective for eliciting such terms because photographic guides are generally systematic and present comprehensive information. However, photographic guides often only provide small photos, which are difficult for linguistic consultants to properly recognize. This methodology induces linguistic consultants to make mistakes more easily.

This paper employs the photographic guide methodology owing to concerns regarding the consultant's age and fieldwork efficiency. Problematic items will be explained in the following sections for each case.

2. Saek Phonology
2.1 Phonological Inventories
The phonological inventories of the At Samart variety of Saek can be illustrated as seen below. Most of the phonological analysis follows Gedney's (Hudak 1993), but my linguistic consultant articulates differently in some respects.

[initial consonants]

p b	t d	c	k	ʔ
ph	th	ch	kh	
m	n	ɲ	ŋ	
f v	s		ɣ	h
w	l r	y		

[consonant clusters]

/-l/: pl-, phl-, bl-, tl-, thl-, ml-

/-r/: pr-, phr-, tr-, thr-

[final consonants]

-m, -n, -ŋ

-p, -t, -k, -ʔ

[vowels]

	Front	Back Unrounded	Rounded
High	i, ii	ɯ, ɯɯ	u, uu
Mid	e, ee	ɤ, ɤɤ	o, oo
Low	ɛ, ɛɛ	a, aa	ɔ, ɔɔ

[diphthongs]

ia, ɯa, ua

[Tones] (this notation follows Gedney's descriptıon)

1: mid-level, with rise on end, 34
2: low level, 11
3: mid, falling to low, glottal constriction

4: high rising-falling, 454
5: high falling, 52
6: mid-level, with slight fall, glottal constriction

2.2 Topics in Phonetic-Phonemic Interfaces
In the interview with the author's language consultant, there were some problems in the phonetics and phonology in AS-Saek.

2.2.1 Articulation of /ɲ/ and /ŋ/

The palatal nasal in Southeast Asian languages is usually described as /ɲ/, which is a member of the International Phonetic Alphabet (IPA). The phonetic symbol of [ɲ] is known as the palatal nasal in French (e.g., {gn} in 'monta**gn**e') and Italian (e.g., {gn} in '**gn**occhi'). Gedney also used this symbol in AS-Saek, but it would be better described as /ɳ/, which is articulated as an alveo-palatal nasal but not a member of the IPA.

Additionally, a problem arises in the articulation of [ŋ], especially in the combination for the velar nasal [ŋ] + the vowel [ɛ]. Gedney describes the word for "money" as /ɲɛn4/, with the author's fieldnote also being /ŋɛn4/, which corresponds to the Standard Thai เงิน /ŋən/. The velar nasal should have undergone palatalization along with the rhyme change (ə > ɛ), hence the AS-Saek of Gedney's data has /ɲ/ in this word, though my linguistic consultant should have preserved the onset /ŋ/.

2.2.2 Allophonic variation of consonant clusters: pl~ pr, tl~ tr

There is another segmental problem in AS-Saek, such as the allophonic variation of consonant clusters: pl ~ pr, tl ~ tr, etc., which is also documented in Kosaka (1992). This paper notes the distinctions between the two groups, but from a phonological perspective, we should admit that these two varieties can be articulated freely and must be analyzed as a single phoneme in the future.

2.2.3 Consonant clusters with /-w-/

Gedney's data indicated that there are consonant clusters with medial /-w-/, namely, /ʔw-,[6] kw-, khw-, lw-, ŋw-, sw-, thw-, hw-/ (Hudak 1993: xxvii), but in the author's fieldnote no such clusters can be found.

2.2.4 Coda /-l/

As Gedney noted (Hudak 1993: xxx—xxxi), older generation speakers had clear distinctions between the coda /-l/ and /-n/, while younger generation speakers have a single form /-n/. The author's consultant also does not have the coda /-l/.[7]

2.2.5 Tonemes

According to Gedney, AS-Saek has six tonemes, though they are often hard to differentiate in some cases. Gedney's tone box (see Table 1) is famous in Tai linguistics and has been utilized for subgrouping Tai dialects and explaining historical developments.

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[6] In Gedney's notation, the glottal stop is marked as /ʔ/.

[7] In 2017, the author visited Ban Pha Thoung village in Khammouane Province, Laos and interviewed residents for the local dialect of Saek. They still preserved the final /-l/ in some words, like /buɯl1/ 'sky', etc.

Table 1: Tone Box from Gedney (Hudak 1993)

Initial\ Tone	A	B	C	D-short	D-long
aspirate	2,1				
plain	1	6	3	4	6
glottal	1				
voiced	4	5	6	6	5

At the proto-language stage, there are four tonemes, namely tones A, B, C, and D. In the course of divergence, the tonal split caused, depending on the initial phonation type, like aspirate, plain, glottal, and voiced. Tone D has been split into two types, D-short and D-long, which depend on the condition of vowel length. According to Gedney's tone box (Gedney 1972), there is a clear distinction between the aspirate/plain/glottal initial group and the voiced initial group. As in Table 1, tone 2 has a limited functional load, while tone 1 has a heavier load that has developed from Tone A.

The author's fieldwork discovered that Tone 3 and Tone 6 are sometimes fairly difficult to differentiate, as Gedney's data also marked both tones for the same lexeme (E.g., /ˀiaŋ3/ =/ˀiaŋ6/ 'mynah,' /taŋ6 ˀii3/ = /taŋ6 ˀii6/ 'chair') (Hudak 1993: 18).

3. Mammals

This section will document Saek mammal terms from the author's fieldnotes. First, mammal data excavated from my fieldwork is shown in the following table:

Table 2: Mammals in AS-Saek

Item No.	Gloss	Hayashi's fieldnote	Gedney
[3-1]	bear	thua4 mii1	mii2, mɯay2, mɤɤy2
[3-2]	beautiful tree squirrel	(thua4) trɛɛ1	trɛɛ1
[3-3]	buffalo	thua4 vaay4	vaay4
[3-4]	cat	thua4 mɛɛw4	mɛɛw4
[3-5]	cattle	thua4 bɔɔ4	bɔɔ4
[3-6]	deer	(thua4) vuaŋ4	vuaŋ4
[3-7]	dog	thua4 maa2	maa2
[3-8]	dugong	mɛɛw4 nam6	------
[3-9]	elephant	thua4 saaŋ6	saaŋ6
[3-10]	goat	thua4 bɛɛ3	bɛɛ3, phɛʔ6
[3-11]	Himalayan striped squirrel	(thua4) kaʔ6 cɔɔn3	------
[3-12]	horse	thua4 maa6	maa6
[3-13]	horseshoe bats	(thua4) kia1	kia1, cia1 ('bat')
[3-14]	large Indian civet	ŋɛn2 ruaŋ2 kaan6	------
[3-15]	leopard	kuuk6 traaw1	------

[3-16]	little civet	(thua4) kuuk6 mɛɛw4	mɛɛw4
[3-17]	Malay civet	(thua4) kuuk6 traaw1	------
[3-18]	monkey	thua4 liiŋ4	liiŋ4
[3-19]	otter	(thua4) kay3	naak5 [L!]
[3-20]	pig	thua4 muu2	muu2
[3-21]	porcupine	(thua4) men3	men3, man3
[3-22]	rabbit	thua4 kaʔ6 taay6	ka6 taay6
[3-23]	rats	nuu2	nuu2
[3-24]	rhinoceros	(thua4) rɛɛt5	rɛɛt5
[3-25]	round leaf bats	(thua4) paaŋ6	kia1, cia1 ('bat')
[3-26]	tiger	thua4 kuuk6	kuuk6
[3-27]	wild buffalo	vaay4 thuan5	vaay4
[3-28]	wild pig	(thua4) muu2 thuan5	muu2

The table contrasts the data from my fieldnotes with Gedney's data compiled in Hudak (1993, 2010). There are some words that cannot be found in Hudak (1993), such as 'Malay civet,' which might be newly discovered words in my fieldwork.

As is well known in Tai linguistics, the morpheme *thua4* is a classifier for counting animals and sometimes precedes faunal terms. Its literal meaning is 'body,' which corresponds to Standard Thai *tua1* ตัว This paper analyzes this morpheme as a 'classifying prefix' that marks animals and occurs optionally.[8]

The following subsections will focus on detailed descriptions of AS-Saek mammal terms.

3.1 Bear

The author's data for 'bear' is /mii1/, which differs from Gedney's /mii2, mɯay2, mɤɤy2/. The Standard Thai word for 'bear' is หมี /mii5/ [3-1], which corresponds to Tone A at the Common Tai stage and should be /mii2/ or /mii1/ in Saek according to Gedney's tone box. Gedney's data show /mii2/, but my consultant provides me with data attesting to /mii1/, both of which fit with Gedney's tone box. This /mii1/ represents the generic term for 'bear.'

Hudak (2008: 91) notes that the Saek /mii2/ of Gedney's data is said to be from Lao or Siamese. If this is the case, the tone of the word for 'bear' in Siamese is the mid rising tone, which sounds similar to tone 1 in AS-Saek. Tone 2 in AS-Saek is the low-level tone. /mii1/ in my fieldnote is likely borrowed from Siamese.

Gedney's data also have /mɯay2/ and /mɤɤy2/, which seem to denote another kind of 'bear.' Hudak (2008: 91) lists the Yay word [Vietnam; Northern Tai] /mɯay1/ and the Wuming word [China; Northern Tai] /mɯy1/, which correspond to Gedney's /mɯay2/ and /mɤɤy2/, but my fieldnotes lack these data at the moment.

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[8] The occurrence of *thua4* might relate to domestication (James Chamberlain, pc. 2019).

3.2 Buffalo, Cattle, and Pig

My fieldnotes document the words for 'buffalo,' 'cattle,' and 'pig' as /(thua4) vaay4/ [3-3], /(thua4) bɔɔ4/ [3-5], and /(thua4) muu2/ [3-20], respectively, which are the same forms as those found in Gedney's data.

There are data for 'wild buffalo' [3-27] and 'wild pig' [3-28] in my fieldnotes, which are documented as /vaay4 thuan5/ and /thua4 muu2 thuan5/. These are clearly compounds that include the morpheme 'wild' /thuan5/, which is documented as /thual5/ (OG) or /thuan5/ (YG) in Gedney's data.

3.3 Cat, Civet, Tiger, and Dugong

The words for 'cat' and 'tiger' in my fieldnotes are the same as those in Gedney, namely /mɛɛw4/ [3-4] and /kuuk6/ [3-26], respectively. However, there are related words for these two words in my fieldnotes that cannot be found in Gedney's data.

The word for 'large Indian civet' seems to be a compound noun. The first element is /ŋɛn2/, corresponding to /ŋɛl2, ŋɛn2/ in Gedney's data (Hudak 1993: 303), which Gedney explained was the word for 'civet cat.'[9] /ruaŋ2/ means 'tail' (Hudak 1993: 408), and /kaan6/ means 'to mark, be striped' (Hudak 1993: 136). Therefore, /ŋɛn2 ruaŋ2 kaan6/ literally means 'striped-tailed civet cat.' My linguistic consultant told me that it is called '/hen5 haaŋ2 kaan1/' in Standard Thai, but it may be a Lao compound word like ເຫັນຫາງກ່ານ /hĕnhăaŋkāan/ that can literally be interpreted as 'striped-tailed civet cat.'

The word for 'little civet' /kuuk6 mɛɛw4/ [3-16] is a compound of /kuuk6/ and /mɛɛw4/, which can be interpreted as 'cat-like tiger.'

The words for 'leopard' and 'Malay civet' are morphologically the same, consisting of /kuuk6/ 'tiger' and /traaw1/ 'star' (Hudak 1993: 472—473).

The word for 'dugong' [3-7] in AS-Saek is an interesting one, which seems to be especially rare. /mɛɛw4 nam6/ is a compound of /mɛɛw4/ 'cat' + /nam6/ 'water', hence, the literal rendering being 'water cat,' a result of metaphoric compounding.

3.4 Bats

In my fieldnotes, the word for 'horseshoe bats' [3-13] in AS-Saek is /(thua4) kia1/, which is identical to Gedney's /kia1/. Gedney's /cia1/ seems to be a loanword from Lao/Isan, which has the form of /(too1) cia1/ (ໂຕ)ເຈຍ (Lao). /kia1/ is considered to be the original form for 'bats' in AS-Saek.

There is, however, another word for bats in my fieldnotes, namely 'round leaf bats.' I found /(thua4) paaŋ6/, which Gedney described as 'flying squirrels.'

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[9] Gedney exemplified a type of 'civet cat,' like /ŋɛn2 ʔom3/ (Hudak 1993: 21, 303).

Figure 1: Round leaf bats (photo from Wikipedia)

Figure 2: Flying squirrels (photo from Wikipedia)

The photos, borrowed from Wikipedia, show bats that look quite different from each other. The most significant differences are seen in the face and wings.

3.5 Squirrels

In my fieldnotes, there are a few words for 'squirrels,' such as 'beautiful tree squirrel' [3-2] and 'Himalayan striped squirrel' [3-11].

The word for 'beautiful squirrel' in my fieldnotes is documented as /(thua4) trɛɛ1/, which is the same as the word for 'squirrel' in Gedney's data.

The word for 'Himalayan striped squirrel' is not found in Gedney, but my linguistic consultant told me that it is called /(thua4) kaʔ6 cɔɔn3/, the historical origin for which is in need of further analysis.

It is interesting to note that /rɔɔk5/ 'giant squirrel' in Gedney's data cannot be found in my data but may be related to the word in my data for /(thua4) kaʔ6 rɔɔk5/ 'masked palm civet,' which looks similar to some kinds of squirrels.

3.6 Otter

Gedney documented the word for 'otter' as /naak5/, which normally has morphological correspondence with other Tai languages like Siamese /naak3/; Yay /naak5/; Wuming /naak6/, etc. (Hudak 2008: 134). On the other hand, the author's linguistic consultant said that the otter is called /kay3/, whose segmental form is the same as the word for 'chicken' /kay6/. It is impossible to see the otter in this area, but the origin of this word form needs additional analyses.[10]

4. Insects

This section will document the At Samart insect terms from the author's fieldnotes. The insect data excavated from my fieldwork is shown in the following table:

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[10] Chamberlain (2018: 69) lists the Kri word for 'otter' as /muyaan keʔ/, which might be related to /kay3/ 'otter' in AS-Saek. Chamberlain (pc.) said that Kri is spoken in Ban Maka, which is close to the Sek villages like, Ban Toeng, Ban Na Meo, Ban Beuk, etc.

Table 3: Insects in AS-Saek

	Gloss	Hayashi's fieldnote	Gedney
[4-1]	ant	thua4 mɛk6	mɛk6
[4-2]	bee	thua4 rooy2	rooy2
[4-3]	bug, insect	(thua4) mɛɛŋ4	mɛɛŋ4
[4-4]	butterfly, stick insects/ Phasmatodea	thua4 buŋ6 baa3	buŋ6 baa3
[4-5]	centipede	(thua4) caʔ6 thrip4	ca6 thrip4
[4-6]	cicada	(thua4) cak4 cɛn3	------
[4-7]	click beetle	thua4 mɔɔt5	------
[4-8]	cockroach	(thua4) saap6	saap6
[4-9]	cricket	(thua4) caʔ6 riit6	tuŋ6 tian3, tuŋ6 tial3
[4-10]	diving beetle	thua4 nuŋ3 ȵiaŋ3	------
[4-11]	dragonfly	(thua4) say6 dua1	mee5 saay2 dua1
[4-12]	earth cricket	(thua4) tuŋ6 tian3	tuŋ6 tian3, tuŋ6 tial3
[4-13]	earthworm	thua4 truan1	thua4 trual1, thua4 truan1
[4-14]	flies	thua4 mɛɛŋ4 ŋen2	mɛɛŋ4 ɲen2
[4-15]	grasshopper	(thua4) khaʔ6 nak4	kha6 nak4
[4-16]	horsefly, gadfly	thua4 ruat6	luap6
[4-17]	jewel beetle, Buprestidae	thua4 mɛɛŋ4 phuu6	mɛɛŋ4 phuu6 'carpenter beee'
[4-18]	Lethocerus deyrollei	thua4 mɛɛŋ4 daa1	------
[4-19]	longhorn beetle	thua4 mee5 viat5	------
[4-20]	maggot	thua4 nɔɔn2	nɔɔn1, nɔɔn2
[4-21]	mayfly	thua4 muŋ2 mao5	------
[4-22]	migratory locust/	thua4 heew2	------
[4-23]	mosquito	thua4 ȵuŋ4	ɲuŋ4
[4-24]	moth, white ant	(thua4) caʔ6 pluk4	caʔ6 pluk4
[4-25]	Nepidae	thua4 nam6 phun6	------
[4-26]	praying Mantis	thua4 mɛɛŋ4 maa6	------
[4-27]	red ant	mɛk6 ɣum4 ɣan4	mɛk6 ɣum4 ɣan4
[4-28]	Siebold's dragonfly, Anatogaster Sieboldii	thua4 ȵiaw2	------
[4-29]	spider	thua4 cuŋ6 thraaw2	thruŋ6thraaw2
[4-30]	stag	thua4 khaam6	------
[4-31]	stink bugs	thua4 mee5 khɛɛn4	------

4.1 Cicada

Interestingly, a word for 'cicada' cannot be found in Gedney's data. In my fieldnotes, it is documented as /(thua4) cak4cɛn3/ [4-6], which definitely seems to be a loanword from Lao จักจั่น /cákcān/ or Standard Thai จักจั่น /cak2can2/. We should note, however, that the vowel of the second syllable /cɛn3/ is different from that of Lao or Thai.

4.2 Click Beetle

My fieldnotes document the word for 'click beetle' as /thua4 mɔɔt5/ [4-7], which is, however, described as 'termite' in Gedney's data (Hudak 1993: 261). 'Click beetle' looks very different from 'termite,' hence the difference of meaning between Gedney's data and my fieldnotes seems somewhat strange. A mistake might have occurred in the data collection process of the author.

Figure 3: Click beetle (photo from Wikipedia)

Figure 4: Termite (photo from Wikipedia)

It should be noted that my language consultant indicated that the word for 'larva of click beetle' is /thua4 naan6/, which also cannot be found in Gedney's data.

4.3 Cricket and Earth Cricket

/tuŋ6tian3/ is found in both the author's fieldnotes and Gedney's data (Hudak 1993: 479), but Gedney documented this word as 'cricket,' while the author's consultant said that this word is translated into จิ้โล่ /cī: lɔ̄:/ in Lao, which can be found as the word for 'earth cricket' in Kerr (1972).

The author's consultant recognized that the words for 'Gryllidae' and 'Rhaphidophoridae' (including 'cave crickets,' 'camel crickets,' etc.) are called /(thua4) caʔ6 riit6/, which might be better analyzed as generic terms for 'crickets,' though they are not found in Gedney's data.

4.4 Longhorn Beetle

The word for 'longhorn beetle' is documented as /thua4 mee5 viat5/ in my fieldnotes, but it is not found in Gedney's data. The construction of this word is

/mee5/ 'mother' + /viat5/ 'wing' (Hudak 1993: 537). It is an interesting name, as there are many other winged, flying insects beyond the 'longhorn beetle.'

4.5 Maggot

The word for 'maggot' is documented as /thua4 nɔɔn2/ in my fieldnotes, but Gedney's data describes it as the word for 'worm.' On the other hand, Gedney's data seem not to describe the word for 'maggot.' My linguistic consultant may recognize 'maggot' as included within the concept of 'worm.'

4.6 Nepidae

My fieldnotes documented the word for 'Nepidae' as /thua4 nam6 phun6/, which is not found in Gedney's data. Gedney's data describe that /nam6 phun6/ denotes 'betel juice,' hence AS-Saek may recognize that Nepidae relates to betel trees.

4.7 Spider

My language consultant calls 'spider' /(thua4) cuŋ6 thraaw2/ [3-28]. Gedney's data document it as /thruŋ6thraaw2/ (Hudak 1993: 511). The onset of the first syllable /cuŋ6/ is different from that of Gedney's data. It might be a result of affrication, /thr-/ > /c/, but the reason why /th-/ has been unaspirated cannot be explained at the moment.

5. Reptiles and Fish

This section will document reptile and fish names in AS-Saek.

Table 4: Reptiles and Fish in AS-Saek

Item No.	Gloss	Hayashi's fieldnote	Gedney
[5-1]	cobra	(thua4) ŋua4 haw6	------
[5-2]	crocodile	(thua4) khɛɛ6	khɛɛ6
[5-3]	eel	(thua4) lian1	lian1
[5-4]	fish	praa1, plaa1	praa1, plaa1
[5-5]	frog	(thua4) kap4	kap4
[5-6]	gecko	(thua4) kaʔ4 kɛɛ5 ~ kak4 kɛɛ5	kap4 kɛɛ5, kak4 kɛɛ5
[5-7]	snake	(thua4) ŋua4	ŋua4
[5-8]	turtle	thua4 rɔɔ4	rɔɔ4

5.1 Cobra and Snake

In my fieldnotes, the word for 'snake' is called /(thua4) ŋua4/ [5-7], which is the same as in Gedney's data. The rhyme /-ua/ of this Saek word is different from that of Standard Thai งู /ŋuu1/, but at the same time corresponds to that of other Northern Tai words such as the Yay /ŋɯa4/, Wuming /ŋɯ2/ and Po-ai /ŋɯɯ2/ (Hudak 2008: 95).[11]

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[11] In Northern Tai languages, there is a stable rhyme correspondence in some words as seen below.
i) 'ear': Saek /rua4/, Yay /rɯa4/, Wuming /rɯ2/, Po-ai /lɯɯ2/ (Hudak 2008: 121)

Cobra is a kind of snake and has a Latin name 'Elapidae,' which is not documented in Gedney's data but is described as /(thua4) ŋua4 haw6/ [5-1] in my fieldnotes. /haw6/ literally means 'to bark' (Hudak 1993: 109), which might relate to the morphology of this word.[12,13]

There are other expressions relating to snakes such as /(thua4) ŋua4 phit6/ or /(thua4) ŋua4 thuu3/, which can be translated into 'king cobra' or 'poisonous snakes.' /phit6/ literally means 'poison' (Hudak 2010: 100), and /thuu3/ means 'scold' or 'fierce' (Hudak 2010: 16). On the other hand, the word for 'python,' which Gedney documented as /ŋua4 trɔɔ1/, /ŋua4 tlɔɔ1/, /ŋua4 trɛn1/, or /ŋua4 tlɛn1/, and was analyzed in detail from Kra-Dai zoological linguistics by Chamberlain (2018, 2019a)[14], was unfortunately not to be found and thus documented in the author's fieldnotes.

5.2 Fish
Both my fieldnotes and Gedney's data describe the word for 'fish' as /praa1/ or /plaa1/ [5-4]. This word clearly corresponds to the Standard Thai word ปลา /plaa1/ or Lao word ປາ /paa1/, the former form possibly being related to the AS-Saek word.

The onset clusters /pl-/ and /pr-/ are now in free variation as Kosaka (1992) noted, but Gedney's data said that /praa1/ is used by younger generation speakers (Hudak 1993: 346). This word illustrates the interesting sound change of *pl- > pr- in Northern Tai linguistics, though the other Northern Tai languages do not have *pr- reflexes; Yay /pya1/, Wuming /plaa1/, Po-ai /pyaa1/ (Hudak 2008: 97).

5.3 Gecko
In my fieldnotes, the word for 'gecko' is /(thua4) kaʔ4 kɛɛ5/ or /(thua4) kak4 kɛɛ5/ [5-6], while Gedney described it as /kak4 kɛɛ5/ or /kap4 kɛɛ5/. This word may come from an onomatopoeia that imitates the sound of gecko. Hence, the first syllable of the root /kaʔ4/ or /kak4/ has nothing to do with the word for 'frog,' though Gedney's language consultant might imagine there to be a connection with 'gecko.'

5.4 Turtle
'Turtle' /rɔɔ4/[15] [5-8] is an interesting word in AS-Saek, which has no sound/ morphological correspondence with other Tai languages[16], and might be a

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ii) 'grass': Saek /ɲua3/, Yay /ɲia3, ɲa1/, Wuming /ɲɯ3/ (Hudak 2008: 111)

[12] Siamese also has งูเห่า /ŋuu1 haw2/, which consists of /ŋuu1/ 'snake' + /haw2/ 'to bark.' In addition, Atsuhiko Kato (pc.) told me that the Burmese word for 'cobra,' မြွေဟောက် /məhauʔ/ or /mwehauʔ/, consists of မြွေ 'snake' + ဟောက် 'to bark.' See Harada and Ohno (1979: 374, 375, 528).

[13] Chamberlain (pc.) revealed to me that Saek originally had a separate etymon for 'cobra,' /ŋua phaal/ (/ŋua phaan/ in Na Kadok of Laos), which must be a unique Saek innovation.

[14] Chamberlain (2019a: 42) claims that /ŋua4 tlɔɔ1/ seems to be of Kri-Mol origin, and /ŋua4 trɛn1/ is obviously a Kri-Mol loanword.

[15] The tone of /rɔɔ4/ is sometimes articulated like high falling tone (tone 5).

[16] As is well-known, Tai languages have the similar or same forms as Standard Thai /taw2/; Shan /taw2/, Tai Khaw /taw2/, Tai Dam /taw2/, Nong Khai dial. /taw2/, Tai Lue /taw2/ (Hudak 2008).

loanword from Vietnamese languages as seen in the Vietnamese *rùa* (Kosaka 1997: 137) and the Vinh dialect of Vietnamese *rò*/ *rùa* (Kosaka 1997: 139). We should note that the AS-Saek form for 'turtle' is similar to Kri-Mol (Vietic) languages, such as Thémarou *rɔɔ*, Kri *r̥ɔɔ*, Mlenbrou *raa*, etc. which can be dated back to Proto-Mon-Khmer **ruus* (Chamberlain 2018: 117).

6. Birds

This section will describe bird names in AS-Saek. They are illustrated in Table 5, which includes many words that are not found in Gedney's data.

Table 5: Birds in AS-Saek

Item No.	Gloss	Hayashi's fieldnote	Gedney
[6-1]	Asian palm swift	thua4 nɔk6 ʔɛɛn6	------
[6-2]	black eagle	nɔk6 ʔiaŋ3 mooŋ3	------
[6-3]	black kite	thua4 nɔk6 kaa1	------
[6-4]	black-crested bulbul	nɔk6 lɛm6	------
[6-5]	black-headed woodpecker	nɔk6 teem3 muun3	------
[6-6]	brown prinia	nɔk6 kaʔ6 dak4	------
[6-7]	chestnut-headed partridge	nɔk6 thaa4	------
[6-8]	chicken	thua4 kay6	kay6
[6-9]	Chinese Francolin	nɔk6 ʔaʔ6 han1	------
[6-10]	comb duck	nɔk6 pit4 nam6	------
[6-11]	common greenshank	nɔk6 caw3	------
[6-12]	coral-bilted ground cuckoo	nɔk6 saŋ1 kaa1	------
[6-13]	crimson sunbird	nɔk6 ʔɛɛt6	------
[6-14]	crow	kaa1	kaa1
[6-15]	dove	nɔk6 haw2	haw2
[6-16]	duck	nɔk6 pit4	pit4
[6-17]	flycatcher	nɔk6 kaʔ6 cip4	------
[6-18]	Germain's peacock pheasant	kay6 nɔk6 haw6	------
[6-19]	golden babbler	nɔk6 caʔ6 ten5	------
[6-20]	greater coucal	nɔk6 kuut6	------
[6-21]	greater yellownape	nɔk6 thraw3 cuk4	------
[6-22]	grey-headed fish eagle	thua4 nɔk6 rɛɛŋ6	------

[6-23]	hawk	thua4 lam5	lam5
[6-24]	hornbill	nɔk6 kaʔ6 sum4 seen4	------
[6-25]	Kentish plover	nɔk6 ɲaaŋ5	------
[6-26]	kingfisher	nɔk6 kaʔ6 ten1	------
[6-27]	laughing thrush	nɔk6 ɣɔɔ4 kaan6	------
[6-28]	lesser whistling duck	nɔk6 ɣɔɔ4 ŋua4	------
[6-29]	little spiderhunters	nɔk6 muam4 ray4	------
[6-30]	Oriental cuckoo	nɔk6 lam5	------
[6-31]	Oriental plover	nɔk6 tɛn6 tɛɛ6	------
[6-32]	Oriental pratincole	nɔk6 thrɔɔt6 thrɔɔt6	------
[6-33]	owl	nɔk6 kuuk6 mɛɛw4	kaw1
[6-34]	owlet	nɔk6 kaw1	------
[6-35]	parrot	thua4 nɔk6 kɛɛw6	------
[6-36]	peacock	nɔk6 ɲuuŋ4	------
[6-37]	red crossbill	nɔk6 ban1	------
[6-38]	red junglefowl	kay6 phuu6	------
[6-39]	red-wattled lapwing	nɔk6 kay6 naa6	------
[6-40]	red-whiskered bulbul	nɔk6 caʔ6 riw4	------
[6-41]	rufous-bellied woodpecker	nɔk6 luŋ5	------
[6-42]	rufous-throated Partridge	nɔk6 khum3	------
[6-43]	Saunders's gull	nɔk6 kay6 dak4	------
[6-44]	Sarus crane	nɔk6 ɣɔɔ4 ray4	------
[6-45]	scarlet minivet	nɔk6 kin1 prii1	------
[6-46]	shikra	nɔk6 ŋiaw4	------
[6-47]	Siamese fireback	kay6 bɯɯn1	------
[6-48]	small pratincole	nɔk6 ʔiaŋ3	------
[6-49]	sparrow	nɔk6 cɔɔk6	------
[6-50]	slaty-breasted rail	nɔk6 kaʔ6 thaa4	------
[6-51]	thick-billed green pigeon	nɔk6 kɛn1 kɛɛ1	------
[6-52]	Vietnamese greenfinch	nɔk6 cap4 khɔɔn4	------
[6-53]	violet cuckoo	nɔk6 thuu6 thii6	------
[6-54]	white-bellied sea Eagle	nɔk6 lɯk6 reeŋ6	------

| [6-55] | white-ramped vulture | nɔk6 luuk6 man4 | ------ |
| [6-56] | yellow-footed pigeon | nɔk6 saʔ6 vaa6 | ------ |

6.1 /kay6/

The word /(thua4) kay6/ means 'chicken' in AS-Saek. In my fieldnotes, however, there are many words including /kay6/, though scientifically they do not belong to the chicken group.

6.1.1 /kay6 + X/ (/kay6/ is the head noun)

The word for 'Germain's peacock pheasant' is called /kay6 nɔk4 haw6/ [6-18], which consists of /kay6/ 'chicken' + /nɔk6/ 'bird' + /haw6/ 'to bark.' It is literally rendered as 'barking chicken.' It is a kind of pheasant, but according to its photo in Davidson (2009: 14), it resembles a chicken. Davidson (2009: 14) describes that '[t]he distinctive call of the male consists of repeated, drawn-out growls or rattles, "*errrraaaaa*," leading into a harsher cackling that gets louder and angrier when responding to a rival; the whole series can last several minutes.' The word formation can be analyzed as [kay6 [[nɔk4 [haw6]]], in which it can be seen that /kay6/ is the head and /nɔk4/ is included in the modifier.

The word for 'red junglefowl' is called /kay6 phuu6/ [6-38] in my fieldnotes, which consists of /kay6/ 'chicken' + /phuu6/ 'male' (Hudak 1993: 382), though there is also a female 'red junglefowl' as well. Davidson (2009: 13) writes that "this familiar fowl is the most common, widespread, ecologically plastic (found in a wide variety of forest types) and easily seen of the region's pheasants."

'Siamese fireback' is also a kind of pheasant, but its Saek name is /kay6 buun1/ [6-47], as termed by my language consultant, which consists of /kay6/ 'chicken' + /buun1/ 'sky' (Hudak 1993: 52). This pheasant's feathers are blue, which may make the Saek speakers relate it with the concept of 'sky.'

6.1.2 /nɔk6 + kay6 + X/

The words for 'red-wattled lapwing' and 'Saunders's gull' are called /nɔk6 kay6 naa6/ [6-39] and /nɔk6 kay6 dak4/ [6-43], respectively, by my language consultant. They are not scientifically related with 'chicken' and are very different in appearance.

These two words are considered to have the construction of [nɔk6 [kay6 [X]]], whose head is /nɔk6/. /naa6/ as the word for 'red-wattled lapwing' may mean 'mother's younger sibling' (Hudak 1993: 273), but it does not seem to adapt the whole meaning of the name for this bird. On the other hand, /dak4/, in the word for Saunders's gull,' mean 'to be asleep' or 'far, far away' (Hudak 1993: 74, 75), the latter of which may fit this construction.

6.2 Hawk and Cuckoo

Interestingly, the words for 'hawk' [6-23] and 'Oriental cuckoo' [6-30] in this list share the morpheme /lam5/, though the first element of each item is different, /thua4/ and /nɔk6/, respectively. This might lead us to think that /thua4/ and /nɔk6/ are considered to be of different taxa in AS-Saek.

6.3 Owl and Owlet

Gedney recorded the word for 'owl' as /kaw1/ [6-33] (Hudak 1993: 141), which is also found in my fieldnotes as the word for 'owlet' [6-34]. The linguistic consultant in my fieldwork informed me the word for 'owl' is /(nɔk4) kuuk6 mɛɛw4/ [6-33], which consists of /nɔk4/ 'bird' + /kuuk6/ 'tiger' + /mɛɛw4/ 'cat'. As mentioned above in section 2.3, /kuuk6 mɛɛw4/ means 'little civet,' and the author's fieldnotes reflected this meaning in its rendering of 'owl' as 'little civet-like bird.'[17] This word is not found in Gedney's data.

6.4 /nɔk4 + caʔ6 + X/

There are two words beginning with /nɔk6 caʔ6/ in my AS-Saek bird list, /nɔk6 caʔ6 tɛn6/ 'golden babbler' [6-19] and /nɔk6 caʔ6 riw4/ 'red-whiskered bulbul' [6-40], that are not found in Gedney's data. The meaning of /caʔ6/ is still unclear.

/nɔk6 caʔ6 tɛn6/ includes the meaning of other 'babblers', hence it can be interpreted as a generic term for 'babbler.' The meaning of /tɛn6/ is also unknown, but it could be involved with /tɛn3/ 'to wear,' despite the difference in tones.

/nɔk6 caʔ6 riw4/ also includes the meanings of 'ashy bulbul,' sharing the features of color contrast (black head and white belly) with 'red-whiskered bulbul.' /riw4/ literally means 'swift,' which Gedney's data suggest is a semantic restriction ("to be swift of water current only") (Hudak 1993: 401), and might be related to the flying speed of these two bulbuls.

6.5 /nɔk4 + kaʔ6 + X/

There are five words beginning with /nɔk6 kaʔ6/ in my AS-Saek bird list as well, interestingly similar to the morphological structure of /nɔk6 caʔ6 + X/. According to Gedney's data (Hudak 1993), /kaʔ6/ can be viewed as /ka6/ and it means 'to, with, for.'

Among these, there is a similar word in Gedeny's data, namely /nɔk6 kaʔ6 cip4/ 'flycatcher' [6-17], which is described as /nɔk6 ka6 cip4/ 'kind of bird' in Gedney's data (Hudak 1993: 293). The meaning of /cip4/ is uncertain.

The words for 'brown prinia' /nɔk6 kaʔ6 dak4/ [6-6], 'hornbill' /nɔk6 kaʔ6 sum4 seen5/ [6-24], 'kingfisher' /nɔk6 kaʔ6 ten1/ [6-26], and 'slaty-breasted rail' /nɔk6 kaʔ6 thaa1/ [6-50] are also undocumented in Gedney's data (Hudak 1993).

Gedney lists /dak4/ as the word for 'to be asleep' (Hudak 1993: 74) or 'far, far away' (Hudak 1993: 75), which might contribute to the meaning of 'brown prinia.' My linguistic consultant said that /nɔk6 kaʔ6 dak4/ is the word for 'Manchurian reed warbler,' 'common tailorbird,' 'dusky warbler,' 'lemon-rumped warbler,' and 'Blyth's leaf warbler' as well, all of which look very similar to each other.

The word for 'hornbill' also has an interesting morphological structure, as rendered in /nɔk6 kaʔ6 sum4 seen4/. /sum4/ probably means 'to assemble' (Hudak 1993: 447), while the meaning of /seen4/ is still unknown.

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[17] The Mandarin Chinese word for 'owl' also includes the word 'cat' inside, as in 猫头鹰 （猫 māo 'cat'＋头 tóu 'head'＋鹰 yīng 'hawk'）.

The word for 'slaty-breasted rail' is /nɔk6 kaʔ6 thaa4/ in AS-Saek, which is similar to the word for 'chestnut-headed partridge' /nɔk6 thaa4/[18]. Accoding to Gedney's data (Hudak 1993: 483), /thaa4/ also means 'vine,' which might be involved in the morphology of these two words, though this supposition needs further analysis.

6.6 /nɔk4 + lɯk6 + X/

The author's fieldnotes list two words beginning with /nɔk6 lɯk6/, namely /nɔk6 lɯk6 reeŋ6/ 'white-bellied sea eagle' [6-54] and /nɔk6 lɯk6 man4/ 'white-ramped vulture' [6-55]. /lɯk6/ means 'child.'

Gedney's data explained that /lɯk6 reeŋ6/ means 'clapper of a bamboo shell on neck of an animal' (Hudak 1993: 225), which might be involved in the word for 'white-bellied sea eagle.'[19]

/man4/ is a homonym in AS-Saek, which can be defined as 'oil,' 'it, he, she, they,' and 'potato, tuber.' Additional analysis will be necessary to explore the meaning of /man4/ in the word for 'white-ramped vulture.'[20]

6.7 /nɔk4 + ɣɔɔ4 + X/

There are three words with /nɔk6 ɣɔɔ4/ in the author's fieldnotes, including /nɔk6 ɣɔɔ4 kaan6/ 'laughing thrush' [6-27], /nɔk6 ɣɔɔ4 ŋua4/ 'lesser whistling duck' [6-28], and /nɔk6 ɣɔɔ4 ray4/ 'Sarus crane' [6-44]. /ɣɔɔ4/ means 'neck.'

The word for 'laughing thrush' has the element of /kaan6/, which originally meant 'to mark, be striped' (Hudak 1993: 136), hence /nɔk6 ɣɔɔ4 kaan6/ literally means 'marked neck bird.' Davidson (2009: 122—123) illustrates pictures of 'laughing thrushes' with a neck that is black or black-and-white.

The word for 'lesser whistling duck' also has an interesting word structure, /nɔk6/ 'bird' + /ɣɔɔ4/ 'neck' + /ŋua4/ 'snake.'

The word for 'Sarus crane' has /ray4/ at the word-final, which denotes 'long.' Therefore, /nɔk6 ɣɔɔ4 ray4/ literally means 'long-neck bird.' According to the author's consultant, this word also denotes 'spot-billed pelican,' and 'storks,' both of which have a long neck.

6.8 Miscellaneous

Lastly, we will turn our focus to several morphologically interesting bird names from the author's fieldnotes.

The word for 'little spiderhunter' is called /nɔk6 muam4 ray4/ [6-29], which consists of /nɔk6/ 'bird' + /muam4/ 'lips' + /ray4/ 'long.' The author's consultant

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[18] Gedney's data says that /nɔk6 thaa4/ is 'partridge' (Hudak 1993: 482), though in the author's fieldnote, /nɔk6 khum3/ is also a kind of partridge, namely 'Rufous-throated partridge.'

[19] The author's consultant says that /lɯk6 reeŋ6/ can denote 'White-bellied Sea Eagle.' The omission of /nɔk6/ is allowed.

[20] This bird is listed as "critically endangered" in IUCN Red list (https://www.iucnredlist.org/, last access on May 17, 2019), hence it is definitely difficult to find in Nakhon Phanom as well.

uses the same word for 'streaked spiderhunter.' Both 'spiderhunters' have long beaks.

The word for 'Vietnamese greenfinch' is called /nɔk6 cap4 khɔɔn4/ [6-52], which consists of /nɔk6/ 'bird' + /cap4/ 'to catch' + /khɔɔn4/ 'to carry on one end of a pole over the shoulder' (Hudak 1993: 182). The author's consultant indicated that this word also denotes 'spot-winged grosbeak' and 'chestnut bunting' as well.

The word for 'scarlet minivet' is /nɔk6 kin1 prii1/ [6-45], which consists of /nɔk6/ 'bird' + /kin1/ 'to eat' + /prii1/ 'banana blossom' (Hudak 1993: 350). The author's consultant revealed that /nɔk6 kin1 prii1/ eats the beautiful fruits of high trees. This type of nomenclature is generally found in faunal terms, as in the English 'bee-eater.' (Matisoff 2011).

7. Conclusions and Further Topics of Study

In conclusion, this paper illuminated many faunal terms in At Samart Saek, which expands the lexicon with words that Gedney had not illustrated. The author only provided a list of them in this paper, but it is possible to mention some morpho-semantic features of the words outlined above.

Firstly, AS-Saek utilizes a morphological structure for faunal terms, comprising the following two elements: [thua4 +X]. In principle, /thua4/ can occur optionally, and {X} generally can be divided into two morphemes, namely {X}={A+B}. A is usually slotted with class names and B with modifiers. Examples of both are presented below.

    X = A +B
      A =Class Name;
            e.g., /kuuk6/ 'tiger,' /mɛɛw4/ 'cat,' /mɛɛŋ4/ 'insect,' /nɔk6/ 'bird,'
                /kay6/ 'chicken,' etc.
      B = Modifiers;
            e.g., /mɛɛw4/ 'cat,' /nam6/ 'water,' /haw6/ 'to bark', etc.

This morphological pattern generally follows Chamberlain's (1977) scheme: UB (Unique Beginner or Kingdom) + LF (Life Form) + G (Generic)/S (Specific) (See APPENDIX). In AS-Saek, {thua4} is slotted into UB, A into LF, and B into G/S.

As you may have noticed, there are some exceptions to the above scheme. In Section 6.1, we saw that /kay6/ 'chicken' and /nɔk6/ 'bird' can be placed in the reverse position, an indication that /kay6/ might be a UB taxon. Also, in Section 6.2, the words for 'hawk' and 'cuckoo,' /nɔk6/ and /thua4/, respectively, come before the same taxon (/lam5/), allowing us to speculate that /nɔk6/ is another UB taxon. In addition to this, the question of whether or not /mɛɛw4/ can be slotted into both LF and G/S is with further analysis, necessitating future contrastive and comparative research.

Secondly, some semantic structures can be noted. The B position of the morphological structure above can have such semantic functions as (i) metaphor, (ii) ecological situation, (iii) place, and (iv) physical feature, all of which can be seen in the following examples:

i) Metaphor
  e.g., 'little civet' ('cat-like tiger') = /kuuk6/ 'tiger' +**/mɛɛw4/ 'cat'**
ii) Ecological Situation
  e.g., 'wild pig' = /muu2/ 'pig' + **/thuan5/ 'wild'**
iii) Place
  e.g., 'dugong' = /mɛɛw4/ 'cat' + **/nam6/ 'water'**
iv) Physical Feature
  e.g., 'lesser whistling duck' = /nɔk6/ 'bird' + **/ɣɔɔ4/ 'neck'** + **/ŋua4/**
    'snake'

The words for 'little civet' above can be considered 'inner-kingdom associations' (or faunafaunic compounds), many related examples of which are analyzed in Matisoff (2011), Kurabe (2019), and Badenoch (2019). The author's fieldnotes have a few terms of such a type, though there may be more and their use in AS-Saek should be investigated in future fieldwork.

The analyses on the morpho-semantic features in AS-Saek faunal terms in this paper should be thought of as tentative, hence they must be studied in more detail.

Finally, the function and meaning of affixes like /caʔ, saʔ, kaʔ/ that are often found in bird names remains uncertain. This should also be explored further to depict a clearer picture of the morphology of At Samart Saek grammar.

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APPENDIX: Chamberlain (1977)'s Scheme on Tai Zoological Terms

*tua ~ *dua (A)   UNIQUE BEGINNER

LIFE FORM

*nrok DS *pla: A *ŋwa: A *mle:ŋ A *hwi: A

bird   fish   snake   arthropod mullosc

GENERIC

Domestic Mammals Lizards Turtles Amphibians Arthropods

Crustacea

Annelids