Waterworld: lexical evidence for aquatic subsistence strategies in Austroasiatic

[DRAFT FOR CIRCULATION]

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ABSTRACT

ACRONYMS

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MEKD	Mon-Khmer Etymological Dictionary
PB	proto-Bahnaric
PK	proto-Katuic
PKha	proto-Khasic
PKhm	proto-Khmuic
PP	proto-Pearic
PPa	proto-Palaungic
PV	proto-Vietic

1. Introduction

Although the Austroasiatic phylum has been long identified, almost no progress has been made in the reconstruction of its proto-lexicon. Individual branches have been reconstructed, and there are many scattered proposals for common lexemes shared between branches, but this is not reconstruction. Shorto (2006 and online) may be part of the problem, since it is oriented towards Mon-Khmer, a hypothetical entity which specialists now disavow. Shorto largely consists of a compilation of lookalikes, and his starred forms may reflect as few as two branches of Austroasiatic.

There may be a problem connected with the internal structure of Austroasiatic. Historical linguistics works best with apical structures where proto-forms can be attributed to different nodes following the identification of sound-shifts. But it seems likely Austroasiatic has a flat structure, its thirteen[1] branches developing from the diversification of a dialect chain rather than a series of hierarchical splits. This would make it 'innovation-linked' rather like Western Malayo-Polynesian; lexemes common to all branches might be rather rare and instead many terms would be shared by a series of near-contiguous branches.

Diffloth (2005) argued that the geographical dispersal characteristic of Austroasiatic reflects a quest for river valleys. Map 2 shows how the scattering of the branches of Austroasiatic indeed follows this pattern to a large extent, although Nicobaric, Aslian and Munda are exceptions. If the argument in Sidwell & Blench (2011) is correct, the flat array arises from an initial phase of aquatic dispersal, driven by improved boats, crops suitable for cultivation in humid soils. This in turn was part of the early spread of the SE Asian Neolithic, which can tracked through sites exhibiting a characteristic artefact cluster, including 'incised and impressed' pottery (Rispoli 2008). In this model, the original homeland of Austroasiatic would have been in the middle Mekong and speakers of the gradually differentiating dialects would have dispersed both north and southwest (Map 1).

Map 1. Proposed dispersal pattern of Austroasiatic
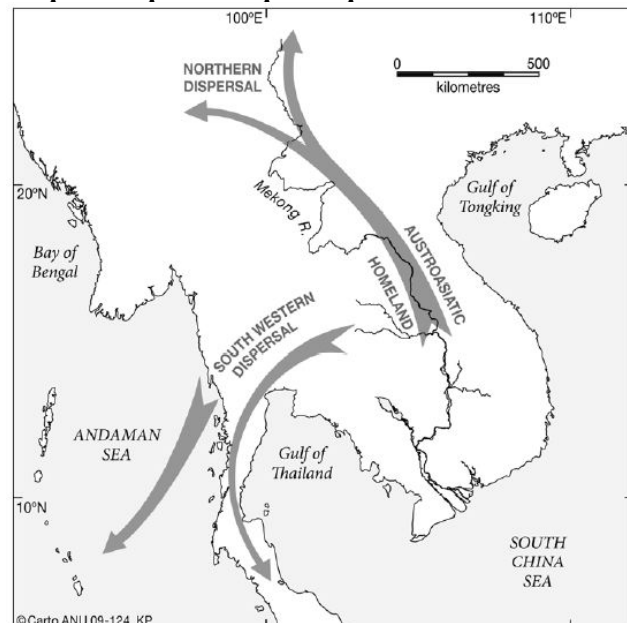
However, it is not necessary to subscribe to this model, nor even to a middle Mekong homeland, to accept the importance of rivers in early Austroasiatic dispersal. The Mekong is the most biodiverse river in the world, surpassing even the Amazon, with over 1200 species of fish (Rainboth 1996) and many Austroasiatic subgroups are situated within its basin. If aquatic subsistence was indeed important at the period of dispersal, then this should be reflected in the lexicon. A preliminary attempt to draw attention to some possible common forms is given in Sidwell & Blench (2011: Table 5). However, this was still framed in the discredited Mon-Khmer model. This paper is an attempt to draw together the lexical evidence for Austroasiatic, making no presumptions about subgroupings. Table 1 shows the lexical categories for common roots relevant to aquatic subsistence

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[1] Or fourteen (see Blench & Sidwell 2011).

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Table 1: Lexical categories relevant to aquatic subsistence

Category	Class	Comment
Rivers		
Water transport	boat	
Fauna	fish	
	crustaceans	
	chelonians	
	others	otter, crocodile, heron
Capture techniques	fish trap	
	fish poison	

Map 2. Austroasiatic languages

WATERSHEDS
and
AUSTROASIATIC LANGUAGES

G. Difloth 2001

500   1000 km

North Munda   Khasian   Vietic   Monic
South Munda   Palaungic   Katuic   Nicobarese
Khmuic   Bahnaric   Aslian
Pakanic   Khmeric
Pearic
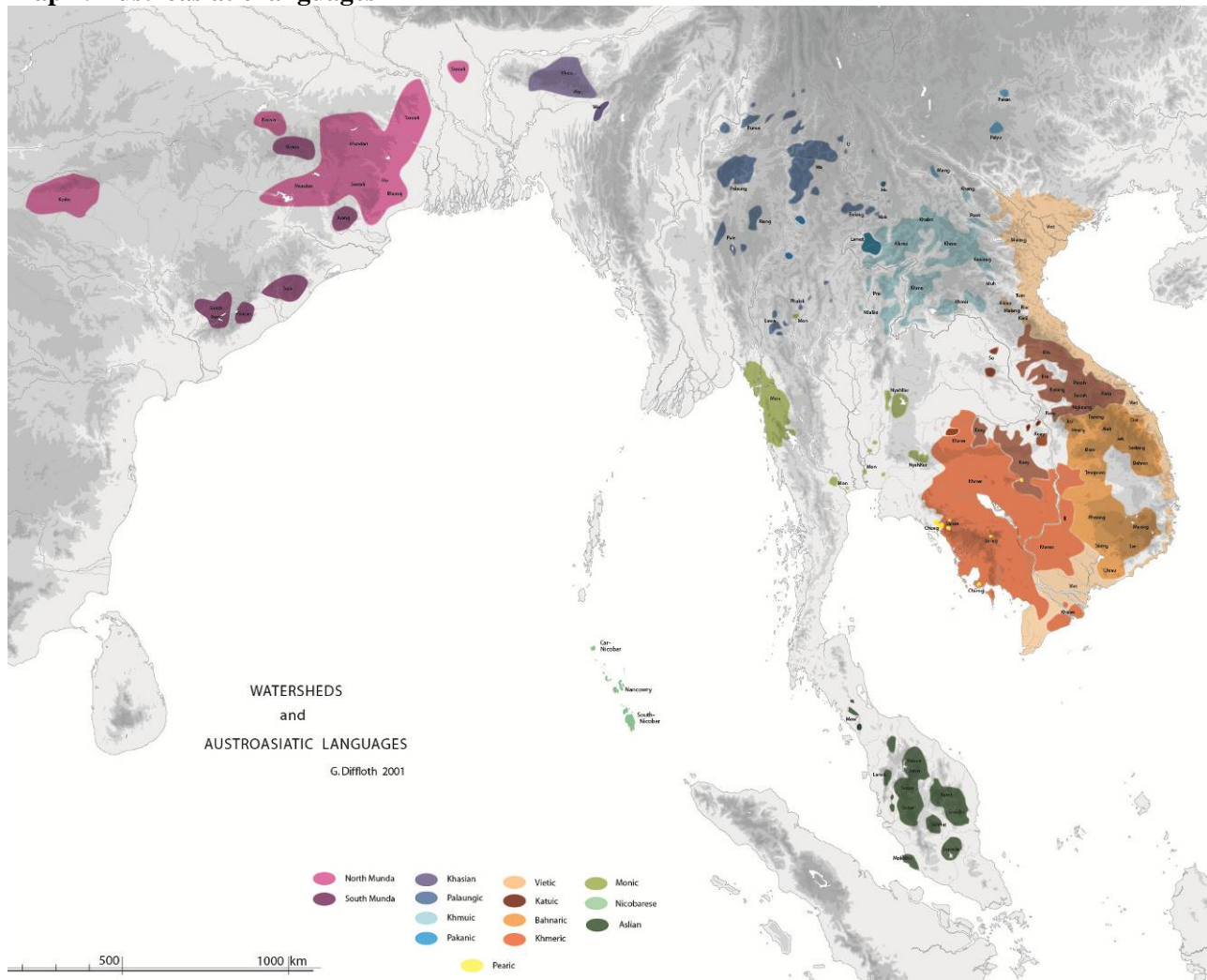
Source: Diffloth (p.c.)

2. Data

The core of this paper consists of tables of lexemes which are either cognate or are borrowings. The focus is on Austroasiatic languages, but where I consider there are cognates in other language phyla, I have also included these, together with my hypotheses concerning the direction of borrowing. Some regional words have a broader distribution, such as the main word for 'river' whose cognates seem to encompass almost every type of water-body from the Mekong to a puddle.

For Austroasiatic, the main source for citations is the online Mon-Khmer Etymological Dictionary (MEKD)[2], which provides access to many of the important lexical sources, retranscribed to IPA, where this is relevant, for example in Nicobarese. Where no source is given for the data, the reference can be found in the MEKD. I have usually cited reconstructions for a subgroup where these are available. Occasionally, where a single form is attested across many languages, I have given a 'common' form, such 'Common Pearic' where the data seems to warrant it. Two groups of Austroasiatic, Munda and Aslian, have undergone extensive relexification, such that older roots which may have shown cognacy have been replaced. Typical Munda dictionaries show extensive borrowing from Hindi or other Indic languages, while Aslian (more surprisingly) borrows extensively from Malay, even in the area of fishing and foraging.

As for other language phyla, Hmong-Mien material is cited from Ratliff (2010). For Sino-Tibetan languages I have used the online STEDT database[3], occasionally supplemented by my own field materials. Austronesian is largely drawn either from Wolff (2010) on Robert Blust's online Austronesian Comparative Dictionary[4]. There is no convenient online source for Daic languages, so I have referenced individual publications.

Frankly, the literature is marred by imprecise definitions and a lack of interest in ethnoscientific terminology. One assumes that fishing peoples such as the Nicobarese must have hundreds of terms for marine and possibly freshwater fish species, but if so, this is not recorded in the literature. Similarly for other aquatic species on the Mekong and Salween systems. The quality of recorded fish names evidenced in Ross et al. (2010) for Oceanic is unfortunately not reproduced elsewhere. With better data this paper could easily be twice as long.

3. Rivers

Mainland SEA has a widespread stem applied to watercourses, or by extension valleys, *#ro[o]ŋ*, which can take a variety of prefixes. The simplest form of the root generally seems to mean channel, gully or ditch as shown in Table 2.

Table 2. A SEA regional term for *-ro(o)ŋ* **for 'ditch, canal'**

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Bahnaric	Rengao	roːŋ	drainage channel, side-channel of river
	Katuic	PKa	*rɔɔŋ	stream, river
	Monic	Mon	pəròŋ	gully
	Palaungic	PP	*rɔŋ	river valley
	Vietic	Vietnamese	giòng	current, flow, stream
Sino-Tibetan	Lolo-Burmese	Burmese	mroŋ	gully
Sino-Tibetan	Lolo-Burmese	Burmese	mroŋː	canal
Daic	Tai	Thai	rɔ̂ŋ	channel, ditch
Daic	Tai	Shan	hɔ̀ŋ	gully

However, this stem seems to have acquired a widespread prefix, k~kh, very early which acted to increase the size of rivers to which it applied. It must have subsequently spread independently from *#ro[o]ŋ*, as it is attested in many subgroups where the bare root is unknown. In this form it is often applied to the Mekong, whose name is incorporated in it, and elsewhere the Salween. Table 3 shows that it is attested in all the major phyla of MSEA except Hmong-Mien.

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[2] http://www.sealang.net/monkhmer/dictionary/
[3] http://stedt.berkeley.edu/~stedt-cgi/rootcanal.pl
[4] http://www.trussel2.com/acd/

Table 3. A SE Asian regional term for 'river', 'valley'

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Bahnaric	PB	*krɔːŋ	river
	Khmuic	Khmu Yuan	krɔ́ːŋ	Mekong
	Mangic	Bolyu	huːŋ[13]	river, ditch
	Monic	PM	*krooŋ	stream, creek, river
	Munda	Kharia	khirom	large river
	Palaungic	proto Waic	*klɔŋ	river
	Palaungic	Palaung	klɔŋ	quantifier for watercourses
	Pearic	Pear [Kompong Thom]	kraŋ	large river
	Vietic	PV	*k-rɔːŋ	river
Austronesian	Chamic	Cham	krɔːŋ	river
	Chamic	Acehnese	kruəŋ	river
Daic	Tai	Thai	khlooŋ	river
Daic	Tai	Shan	khōŋ	Salween
Sino-Tibetan	Kachinic	Kachin	kruŋ	valley
	Lepcha	Lepcha	kyoŋ	valley
	Sinitic	Old Chinese	*k-hlun	river
	Tibetic	Written Tibetan	kluŋ	river
	Lolo-Burmese	Old Burmese	kʰloŋ	river

A distribution like this makes it difficult to establish where the extended root originated. However, for Austroasiatic it is lacking only in the southern languages, Aslian and Nicobaric, whereas it is highly restricted in Sino-Tibetan, having been picked up by Sinitic and Tibetic, but not attested at all in western languages. This suggests a borrowing into Sino-Tibetan as into Daic and Austronesian.

There is another, apparently unrelated root in Austroasiatic which is applied only to large rivers and by extension the sea (Table 4). This is attested in Nicobaric, apparently replacing the #loŋ root.

Table 4. Evidence for reconstructing 'large river, sea' in Austroasiatic

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Bahnaric	Chrau	[daːʔ] nleː	large river
	Katuic	Kuy	thlèː	sea
	Khmer	Khmer	tùənlè	(large) river
	Munda	Kharia	dhara	stream, river
	Nicobaric	Nancowry	kamalɛ́ʔ	sea
Austronesian	Chamic	Cham	dale	check

Ratliff (2010) reconstructs *ɢlaew[A] for 'river' but one of only two exemplified languages, the West Hmongic Luopohe, has ʁlei[A] may be related to this root.

Finally, Austroasiatic may have a number of local roots which refer to water currents. Table 5 puts these forward as suggestions only. They may prove to be more widespread, or possibly just coincidence.

Table 5. Possible Austroasiatic roots relating to river currents

Branch	Language	Citation	Original Gloss
Khmeric	Surin	wuaʔ	to be strong, swift, rapid (current)
Nicobaric	Nancowry	wua	current (of water)
Monic	Mon	həmò ၚော်ိ	flow, current, flood
Nicobaric	Car	ha-nɛː-mə	current of water
Bahnaric	Sre [Koho]	cɔː	to lead (by a current)
Palaungic	PPa	*cɔɔr	current

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4. Water transport

The rivers and seas of MSEA throng with a wide variety of vessels, and in Vietnam, some early river transport has been excavated, preserved in silt, so we can get a sense of the construction of these early river-craft. One of these, oddly, turns out to exhibit a constructional technique otherwise only reported from the Mediterranean (Bellwood et al. 2007). Photo 1 shows modern fishing canoes on the Mekong in Vietnam.

Photo 1. Canoes used for fishing, Vietnam

Source: Author photo

Austroasiatic has two widespread roots for 'boat' which appear to be indigenous. The root *#duuk* is discussed in Diffloth (2011) and is confined to core families in the Central Mekong area, and was presumably lost as Austroasiatic spread west and south. Table 6 shows the reflexes of this root.

Table 6. The *#duuk* root for 'boat' in Austroasiatic

Branch	Subgroup, language	Citation
Bahnaric	PB	*duuk
Katuic	PKa	*duuk
Khmeric	Khmer	tuuk
Monic	Nyah Kur	thù:k
Nicobaric	Nancowry	düe
Pearic	Common	#tɔ̀k
Vietic	PV	*ɗù:k

Pearic may well be borrowed from Khmer. The implosive initial in Vietic is probably not original. If Malay *bidok* 'canoe' is connected this must be a recent borrowing into Malay.

The other root for 'boat' is *#C.lɔɔŋ*, which has a more scattered distribution and is only found sporadically in some branches. However, it is clearly attested in Munda, which makes it more secure for proto-Austroasiatic than *#duuk*. The three different attestations in Mon show the optionality of the prefix over time.

Table 7. An Austroasiatic root for 'boat'

Phylum	Branch	Subgroup, language	Citation
Austroasiatic	Bahnaric	PB	*pluŋ
	Katuic	Ngeq	roŋ
	Khasic	P-Kha	*lɛɛŋ
	Khmuic	Khmu	clɔːŋ
	Monic	Old Mon	dluŋ
	Monic	Middle Mon	gluŋ
	Monic	Mon	klɤ̀ŋ
	Munda	Kharia	ɖoloŋ
	Palaungic	PPa	*ɟnlɔɔŋ
Sino-Tibetan	Kuki-Chin	Lushai	loŋ
	Kuki-Chin	Kyo Chin	mlauŋ
	Naga	Chang	loŋ
	Lolo-Burmese	Written Burmese	lâuŋ
	Lolo-Burmese	Akha	lɔ̀

Matisoff (2003) reconstructs *m.loŋ for proto-Tibeto-Burman, although the distribution shows clearly this is a regional loanword, only found in some Lolo-Burmese languages and the Naga-Kuki-Chin complex.

One term for boat is attested in both Austroasiatic and Austronesian, whose reflexes are laid out in Table 8.

Table 8. A SEA regional term for 'boat'

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Aslian	Jahai	kupon	boat
	Bahnaric	Biat	baŋ	coffin
	Aslian	Semai, Temiar	kapal[5]	boat
	Monic	Old Mon	kḅaŋ	ship
	Mangic	Mang	ɓaaŋ	ferry, boat
	Nicobaric		kopòk	boat
Austronesian	PAN		*qabaŋ	boat, canoe
	Taiwan	Siraya	avaŋ	canoe
	Taiwan	Favorlang	abaŋɯ	boat
	Philippines	Magindanao	kaban	boat
	Philippines	Tagalog	baŋkaʔ	canoe
	Philippines	Sulu	guban	boat
	Ibanic	Iban	boŋ, buuŋ	long, shallow boat,
	Chamic	PC	*bɔɔŋ	coffin
	Malayic	Moken	kabaŋ	boat
	Malayic	Malay	kəbaŋ	vessel
	Malayic	Sekah	gobaŋ	boat
	Barrier	Nias	owo	boat
	Barrier	Sichule	ofo	boat
	Bima-Sumba	Sawu	kowa	boat

The lack of Muṇḍā and Khasi cognates makes it difficult to assign this term to proto-Austroasiatic; and it does not reconstruct to the proto-language in any Austroasiatic branch. Nonetheless the Nicobarese and Aslian forms are clearly not just Malay borrowings, and the stem must be assigned to an early period in Austroasiatic expansion. Mahdi (1999) has identified the links, both cultural and lexical, between coffins and boats, such as is attested in Bahnaric. The widespread Austronesian #baŋka for 'canoe' (e.g. Wolff 2010) is surely a reversal of the elements of #kabaŋ.

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[5] ? < Malay or Tamil

5. River and sea fauna

5.1 Fish

Reconstructing individual fish species in Austroasiatic is problematic simply because the lexical sources are weak on scientific names. However, Table 9 shows a generic term for 'fish', *kaʔ, which is attested in nearly every branch.

Table 9. An Austroasiatic term for 'fish'

Branch	Language	Attestation
Aslian	PA	ka:ʔ
Bahnaric	Sre	ka
Katuic	Kuy	ka:
Khasic	PK	*kʰa
Khmeric	Khmer	ka:-[moŋ &c.] (in compounds)
Khmuic	Kammu-Yuan	káʔ
Monic	Old Mon	kaʔ
Munda	Kharia	ka-[6]
Nicobaric	Nancowry	ká
Palaungic	Lawa	kaʔ
Vietic	Vietnamese	cá

This root is widespread in the region, turning up in Austronesian as *ikan* and even in Japanese.

Two species of catfish are attested in a more restricted set of Austroasiatic branches, as in Table 10 and Table 11;

Table 10. Catfish sp. in Austroasiatic

Branch	Language	Attestation	Gloss
Bahnaric	Sedang	blɔŋ	
Bahnaric	Tarieng	lo:n	
Katuic	Ngeq	klo:	
Khmeric	Khmer	claŋ ឆ្លាំង	prob. *Macrones* sp.
Palaungic:	Lamet [Lampang]	lə:n	

The second root is more doubtful, as the semantic shift to 'sawfish' in Khmer is a bit unlikely.

Table 11. Catfish sp. in Austroasiatic

Branch	Language	Attestation	Gloss
South Bahnaric	Chrau	[ka:] kɔ:	catfish
Monic	Mon	[kaʔ] həkɔʔ	catfish sp.*, Clarias magur*
Khmeric	Khmer	thkɔ:	sawfish

Another species described as a 'serpent headed fish' and is most likely to be a snakehead[7] (Table 12).

Table 12. Fish sp. in Austroasiatic

Branch	Language	Attestation	Gloss
Bahnaric	Sedang	rəlɔ̃n	fish sp.
Katuic	Ngeq	kluan	fish sp.
Nicobaric	Nancowry	lúan	salt-water eel

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[6] Pinnow (1959:64)
[7] Diffloth (1979).

Eel is widely attested in Austroasiatic and appears to be borrowed into Sino-Tibetan and notably in Austronesian (Table 13);

Table 13. 'Eel' in SE Asian language phyla

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Bahnaric	PB	*-duŋ	
	Katuic	PK	*ʔnduŋ	
	Khmer	Surin Khmer	ntuaŋ	
	Khmuic	Khmu	ʔɔntùəŋ	???
	Monic	Nyah Kur	nthòoŋ	swamp eel
	Monic	Mon	daluŋ	
	Palaungic	Lamet [Nkris]	təlaːɲ	eel
	Munda	Mundari	ɖuŋ.ɖuŋ	long, very slender fish
	Munda	Kharia	ɖuŋɖuŋ	eel
	Pearic	PP	*ml(ɔː)ŋ	eel
Sino-Tibetan	Sakish	Kadu	patùn	eel
Austronesian	Philippines	Cebuano	induŋ	moray eel sp.
	Borneo	Iban	lundoŋ	eel
	Sumatra	Karo Batak	duŋduŋ	
	Malayic	Acehnese	ndoŋ	eel
	Malayic	Acehnese	linɔŋ	eel sp.
	Malayic	Cham	lanuŋ	eel
	Malayic	Malay	[ular] londoŋ	sea-snake

Austronesian cognates are clearly not PAN, which is something like *tuła (Wolff 2010).

5.2 Crustaceans

In many ways, crustaceans seem to be more salient in Austroasiatic than fish. Table 14 shows a probable Austroasiatic root for 'prawn, shrimp';

Table 14. An Austroasiatic root for 'prawn'

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Bahnaric	Nyaheun	cɔŋ	prawn, shrimp
	Katuic	PK	*ʔɲcɔŋ	shrimp
	Khmer	Surin	trej-kɔːŋ	shrimp, prawn
	Khmuic	Phong	paː kuːŋ	shrimp
	Munda	Santal	icaʔ	
	Nicobaric	Nancowry	ʃoaŋ	marine shrimp
	Palaungic	Danaw	mɑiʔ³ tɔŋ⁴ kɔŋ¹	prawn
	Pearic	Chong [Kompong Som]	pkɔːŋ	prawn
	Vietic	Thavung	kɔːŋ	prawn
Daic	Tai	Proto-Zhuang-Tai	*kuŋ.C	shrimp
	Kra	Lakkia	tsoŋ.3	shrimp
	Kra	Biao	kuŋ.3	shrimp
Sino-Tibetan	Kuki-Chin	proto-Kuki-Chin	ŋaay kuang	shrimp/prawn
	Naga	Ao	[a]-kuŋ	prawn
	Bodo-Garo	Deuri	cicô	shrimp/prawn

The restricted distribution in both Sino-Tibetan and Daic clearly argues for borrowing in these two phyla.

Table 15 and Table 16 shows more restricted roots for 'shrimp';

Table 15. A central Austroasiatic root for 'shrimp'

Branch	Language	Attestation	Gloss
Bahnaric	Chrau	kəmvih	
Khmu		kɔmpɯ̀h	
Khmeric	Khmer	kɑmpih កំពិស	
Pearic	Chong [of Samray]	kəmpɨːs	small river shrimp

Table 16. Minor AAS roots for 'prawn, shrimp'

Branch	Language	Attestation
Khasic	Pnar [Rymbai]	cʰiŋktat
Khmuic	Khmu	cntah
Palaungic	PP	*kntaas
Katuic	Kui	kaː sum
Vietic	PV	*soːm

Table 17 shows the evidence for reconstructing 'crab' in Austroasiatic;

Table 17. A reconstruction for 'crab' in Austroasiatic

Phylum	Language	Subgroup, language	Citation
Austroasiatic	Aslian	CA	#kantam
	Bahnaric	PB	*ktaːm
	Katuic	PK	*ktaam, *ʔataam,
	Khasic	PKha	*tʰaam
	Khmeric	Khmer	kdaam ក្ដាម
	Khmuic	PKhm	*ktaːm
	Mangic	Mang	taːm[6]
	Munda	PNM	*kaʈkɔm
	Monic	PM	*kntaam
	Nicobaric	Nancowry	katɔŋ-cafa[8]
	Palaungic	PP	*ktaam
	Pearic	Pear [Kompong Thom]	ktaːm
	Vietic	PV	ktaːm
Austronesian	Malayic	Malay	kətam
	Malayic	Moken	kətam
	Chamic	Acehnese	guɯtuɯəm
Daic	Kra	Laha	khlaat

Blust (ACD) reconstructs PAN *kətəm for 'crab' which is evidently related.

Table 18 shows a minor root for 'crab' in Austroasiatic;

Table 18. A minor root for 'crab' in Austroasiatic

Branch	Language	Attestation	Gloss
Bahnaric	Jru'	trʌp	crab sp.
Palaungic	proto Pramic	*hraːp	crab
Vietic	PV	*raːp	crab

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[8] non-edible land crab

5.3 Chelonians

Turtles and tortoises are found throughout the region and constitute an important source of food, but also play a significant role in mythology and oral traditions. They are regularly represented in the historical iconography, notably at Angkor Wat (Photo 2). Although the lexicographic literature is extremely vague on species, it is likely that if these were better identified, the different roots would be found to apply to different species. It is clear that when the Nicobarese migrated to the islands, they re-applied the names to marine species.

Photo 2. Terrapins and fish in water plants

Table 19 *kaap* represents on the most widely attested roots in Austroasiatic, present in both the Nicobars and Aslian, but lost in western subgroups such as Munda and Khasic.

Table 19. A reconstruction for 'tortoise, turtle' in Austroasiatic

Branch	Language	Attestation	Gloss
Aslian	Jahai	kɔh	tortoise sp.
Bahnaric	P-Bahnaric	*kɔ:p	tortoise
Katuic	P-Katuic	*ʔakɔɔp	turtle
Khmuic	Tai Hat	ku:p	turtle
Nicobaric	Car	kap	tortoise
Nicobaric	Nancowry	kap-ka	green turtle (*Chelonia virgata*)
Vietic	Chứt [Arem]	kò:p	shell (crab, tortoise)

Table 20 shows a more uncertain root, which was given by Shorto (2006) as proto-Mon-Khmer. The vowels in Monic are irregular, unless this is a different root. The ku- prefix, added in Munda is striking, because the root then resembles both the Malayic forms and also, more strikingly, those found all over Sub-Saharan Africa (Blench 2008).

Table 20. A reconstruction for 'turtle' in Austroasiatic

Phylum	Language	Subgroup, language	Citation	Gloss
Austroasiatic	Bahnaric	Stieng	blɔ:u	tortoise shell
	Khasic	PK	*-ruʔ	turtle
	Khmeric	Surin	nʌ:ʔ	turtle
	Munda	Sora	'ku(:)lu:-n	turtle
	Munda	Kharia	'kulu	turtle
	Monic	Mon	naoh ကၞုဲ	turtle
	Palaungic	Riang [Sak]	ru:s²	tortoise, turtle
	Vietic	PV	ʔa-rɔ:	tortoise
Austronesian	Malayic	Malay	kura-kura	tortoise

Table 21 shows a root, *t₁paʔ, which seems restricted to freshwater turtle species;

Table 21. A reconstruction for 'freshwater turtle' in Austroasiatic

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Aslian	Jahai	pjɔ̃ŋ	turtle
	Bahnaric	PB	*tpa:	turtle
	Katuic	PK	*tpaa	soft shelled turtle
	Khmuic	PKhm	*tmpaʔ	snapping turtle
	Mangic	Mang	ma:¹ pa:²	turtle, tortoise
	Nicobaric	Car	təkurə̄pə	land turtle
	Pearic	Chong [of Chantaburi]	kapʰa:	turtle soft-shelled
	Pearic	Chong [Kasong]	lpʰa:	turtle soft-shelled
Sino-Tibetan	Mruish	Hkongso	pʰáˆ	soft shelled turtle

Hkongso must be a borrowing from Austroasiatic. Possibly compare proto-Hlaic *tʰuːp* 'point-nosed turtle' 鳖 (Norquest 2007).

Table 21 shows several low-frequency roots for 'tortoise/turtle';

Table 22. Low-frequency roots for 'tortoise/turtle' in Austroasiatic

Branch	Language	Attestation	Gloss
Bahnaric	Mnong [Rölöm]	kra:	large turtle
Khasis	Khasi	dka:r	tortoise
Monic	Mon	klao ဂ္	targe tortoise sp.
Bahnaric	Sapuan	ntə:k	tortoise, turtle
Nicobaric	Nancowry	ʔok-teka	tortoise
Bahnaric	Jruq	tmom	turtle (land)
Katuic	PK	*tmoom	turtle

5.4 Others

A few species characteristic of riverine habitats have significant reconstructible roots in Austroasiatic. These are the otter, the crocodile, the otter and the heron. There are two species of otter found throughout the MSEA region, the oriental small-clawed otter, *Aonyx cinerea* and smooth-coated otter, *Lutrogale perspicillata*. **Map 3** and Map 4 show the range of these two species.

Map 3. range Oriental small-clawed otter, *Aonyx cinerea*

Map 4. Range of the smooth-coated otter. *Lutrogale perspicillata*

Table 23 shows a widespread Austroasiatic root for 'otter' which is also borrowed into Chamic. It is most likely that the original form was closest to Vietic *p-se:ʔ* which accounts for the long vowel and final glottal in other reflexes. The fricative /s/ would have weakened to /h/ in some branches, while Khasi was subject to prefix replacement.

Table 23. A SE Asian root for 'otter'

Phylum	Language	Subgroup, language	Citation
Austroasiatic	Aslian	Semelai	bəheʔ
	Bahnaric	Nyaheun	phie
	Bahnaric	Mnong [Rölöm]	bhiːŋ
	Katuic	PK	*phay
	Katuic	Bru	phɛ
	Khasic	Khasi	kəsiʔ
	Khmeric	Khmer	phèː ឃ្មុំ
	Monic	PM	*phɛɛʔ
	Pearic	PP	#pʰeː
	Vietic	PV	*p-seːʔ
Austronesian	Chamic	PC	*buhay

Another characteristic member of the regional riverine fauna is the crocodile. Crocodiles are regularly represented in historical sources, such as on the Bayon (Photo 3). Table 24 shows a widespread root for 'crocodile' which is missing from the western branches.

Table 24. An Austroasiatic root for 'crocodile'

Branch	Language	Attestation	Gloss
Bahnaric	PWB	*krbɨw	crocodile
Katuic	PK	*krɓəə	crocodile
Khmeric	Khmer	krɑpəə ក្រពើ	crocodile
Khmuic	Khmu [Cuang]	ckʰrɛː	crocodile
Nicobaric	Car	rew	crocodile
Pearic	Pear [Kompong Thom]	krəpəː tiek	crocodile

Table 25 shows two local roots for 'crocodile' in Austroasiatic. They are conceivably related, although reflexes with front and back vowels in Vietic make this doubtful.

Photo 3. Crocodile catching fish on the Bayon

Source: Author photo

Table 25. Local Austroasiatic roots for 'crocodile'

Branch	Language	Attestation
Pearic	Chong [of Kompong Som]	lko̝ː
Pearic	Chong	rəkɔ̀ɔ
Vietic	Mương [Son La]	kʰuː³
Khmuic	Khmu [Cuang]	ckʰrɛː
Palaungic	Lamet [Lampang]	səkheːʔ
Vietic	Thavung	khẽ̂ː

Table 26 and Table 27 show two widespread roots for fishing birds. *#kok* seems to mean 'heron' underlyingly, but it has shifted to hornbill in both Aslian and Khasic. and to cormorant in Vietnamese.

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Table 26. An Austroasiatic root *#kok* **for 'heron', 'fishing bird'**

Branch	Language	Attestation	Gloss
Aslian	Semai	*dkuuk	helmeted hornbill, *Rhinoplax vigil*
Bahnaric	PB	*kɔ:k	egret, heron
Katuic	Pacoh	ka.la:ŋ ku̱:k	pelican
Khasi	Khasi	koh-[karang]	hornbill
Khmeric	Khmer	kok កុក	heron, egret
Munda	Kharia	kɔlɛʔ	heron
Palaungic	PPa	*kVk	heron
Vietic	Vietnamese	cốc	cormorant

Table 27 shows what is clearly a local root for 'pelican' in some central branches of Austroasiatic. The table also includes proposed cognates in non-Austroasiatic languages, but I have not been able to confirm these and they remain to be cross-checked.

Table 27. An Austroasiatic root for 'pelican'

Phylum	Branch	Language	Attestation	Gloss
Austroasiatic	Khmeric	Khmer	tuŋ ទុង	pelican (*Pelecanus* sp.)
Austroasiatic	Monic	Mon	tàŋ	bird including stork and pelican
Austroasiatic	Pearic	Chong [of Samray]	tuŋ	grey pelican (*Pelecanus philippensis*)
Sino-Tibetan	Lolo-Burmese	Burmese	duṁ:	not in dictionary
Daic	Tai	Thai	kratʰuŋ	check
Austronesian	Chamic	Cham	kaɗuṅ (!).	source

6. Capture techniques

Any ethnographic museum in the region usually displays an abundance of fish traps, storage baskets and other devices. These are extraordinarily diverse and few dictionaries capture their specificity. Photo 4 shows some non-return traps made by the Khasi; the fish swims along the funnel and then is unable to reverse and escape. Traps of this type are made throughout the region, but we are not yet in a position to reconstruct individual types. Table 28 shows an Austroasiatic root for 'fish trap' (type unspecified);

Table 28. An Austroasiatic root for 'fish-trap'

Language	Subgroup, language	Citation	Original Gloss
Bahnaric	Sedang	trɔ̃	fish trap
Khmeric	Surin	trù:	bamboo fish trap
Katuic	Kui	thru̱:	cylindrical fish trap made of bamboo strips
Monic	Nyah Kur	thru	bamboo fish trap with a narrow neck
Munda	Kharia	lonɖra	fish trap sp.
Pearic	Chong [Samre]	tûəɹ	fish trap
Vietic	Thavung	to:ŋ	fish trap

There are no confirmed external cognates but Karo Batak has *tuar* 'small fish-trap placed with opening stream-upwards' which could be coincidence. Matisoff (2003: 285) reconstructs **tuŋ* for proto-Lolo-Burmese 'set a trap'. Given that no words for actual fish-trap in Sino-Tibetan seem to be shared with Austroasiatic, this may be just coincidence.

Table 29. A restricted Austroasiatic root for 'scoop net'

Language	Subgroup, language	Citation	Original Gloss
Khmeric	Khmer	chnìːəŋ	scoop-net
Khmeric	Khmer	tnɑɑŋ ដ្ឋំ	fishing net, landing net, scoop net
Monic	Mon	càiŋ; ~ (*jrjaaŋ >)	
Monic	Mon	hnàiŋ	
Palaungic	Lawa Bo Luang	ʔacɯaŋ	to net [fish];

Finally, a common method of catching fish in MSEA is the use of vegetable poisons. Thrown into a pond or pool, they stun the fish, which rise to the surface, without making them toxic. Table 30 shows a root which is spread across much of the range of Austroasiatic, although only attested in four families.

Photo 4. Khasi bamboo fish-traps

Source: Don Bosco Museum, Shillong

7. Conclusions

A combination of linguistic geography and historical linguistics, suggests the possibility that Austroasiatic represents a 'flat array' of languages, and that this is due to an early riverine dispersal (Sidwell & Blench 2011). Using a 'centre of gravity' argument, the Middle Mekong is proposed as the original nucleus of dispersal. The period of dispersal is identified with the SE Asian Neolithic, currently dated to ca. 4000 BP. Although early Austroasiatic speakers were clearly crop producers, growing both taro and rice, if they were largely following river basins, aquatic technology and subsistence must have been highly salient in their vocabulary. The paper shows that a number of lexical items can be shown to be common to many of the branches of Austroasiatic, suggesting them as reasonable candidates for the proto-language. Other roots have more restricted distributions and apply to local areas. Lexical data for Austroasiatic remains highly schematic and imprecise, as well as significantly defective for some branches. This suggests that with greater attention to biological and technical detail, it will be possible to refine some of the reconstructed items proposed here.

Table 30. An Austroasiatic root for 'to poison fish'

Language	Subgroup, language	Citation	Original Gloss
Bahnaric	PB	*kraw	to poison (fish with plant)
Katuic	PK	*kraw	poison (fish)
Khasic	PKh	*kʰəriaw	fish poison
Nicobaric	Car	ka-jaw	to poison fish (with the grated seeds of the *kin-yav*)

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