Unicode request for letters with palatal hook

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Since L2/20-125R was submitted for letters with palatal and retroflex hooks, a number of additional letters have been attested with the old IPA palatal hook. Several have even been used in studies of child acquisition of English. Although palatal-hook letters were officially retired from the IPA in 1989, they continue to be used productively, as seen in Figure 12 from 1996 and Figure 25 *etc*. from 2006. Figure 3 from 2013 shows that they are also used when citing older material.

The characters currently supported by Unicode are ɦ ɕ ʑ ɖ ʤ ɟ ɠ ɧ ʞ ʄ ǃ ᶑ ɱ ɳ ɲ ɸ ɽ ɾ ɻ ʂ ʧ ʈ ᶙ ʧ ʏ ɤ ʒ ʐ ʒ. These are not decomposable, and the diacritic U+0321 ◌̡ is rarely used as a substitute in publication as it has very poor font support. For Unicode to recommend that U+0321 be used for unsupported letters could lead to its general use, creating double encoding of the existing Unicode characters that would be visually indistinguishable in supporting fonts. It is thus better to continue to encode atomic characters. There are not an undue number of them: The next section shows the coverage of the IPA chart by existing and proposed characters, and the relatively few unattested characters that theoretically remain.

Thanks to Denis Moyogo Jacquerye for his feedback and many of the references illustrated below.

Coverage of the IPA chart

Table 1 shows palatal-hook modifications of the pulmonic letters of the last IPA consonant chart to support the palatal hook (IPA 1978). I omit the palatal and retroflex columns but add the affricate ligatures and lateral flap. (Also attested and proposed: implosive ᶑ, retroflex ᶇ.)

ɱ	ɱ̊			ɳ				ɲ̊		ɴ̊							
ɸ	ɸ			ʈ	ɖ			ɟ	ɠ	ɢ	ɢ					ʔ	
ɸ	β	f	v	θ	ð	ʂ	ʐ	ʃ	ʒ	ɧ	ʞ	χ	ʁ	ʍ		ħ	ʕ	h	ɦ
						ʦ	ʤ	ʧ	ʤ										
						ʄ	ǂ												
		ɥ				ɻ				ɯ̊				ẘ					
						ɭ		ʎ											
						ɾ	ɽ					ʁ							

Table 1. Pulmonic consonant letters of the IPA with palatal hook. Letters in bold black are requested; bold red are deferred pending a decision as to whether they should be encoded as Latin or Greek. Those in green italic are already in Unicode. Grey letters are hypothetical.

Among the unattested letters, *ɮ̡ and *ʔ̡ are certainly accidental gaps and might be expected in a future proposal. *ɻ̡ and *ɴ̡ should be rare at best, however, as the base letters themselves were uncommon. *ʉ̡, *ʍ̡ and *ɯ̡ are unlikely for phonological reasons, and it's quite possible they do not occur in the literature. A number of additional letters of the modern alphabet (namely ʙ ʟ ʜ ʢ ʡ) were adopted with the Kiel convention and so did not overlap in time with the palatal hook, at least not officially. Thus there are not likely to be a great many IPA letters with palatal hook that remain for future Unicode proposals.

Variant forms

Job (1981) places the palatal hook above a letter with a descender, e.g. ⟨ġ⟩, ⟨q̇⟩ and ⟨χ̇⟩ for ⟨g̡⟩, ⟨q̡⟩ and ⟨χ̡⟩ (Figure 14). The typesetting is crude, however, and the design perhaps unique to this source, so we do not request a combining 'palatal hook above' pending further attestation.

Characters

IPA letters with palatal hook

ɗ̡ 1DF2D LATIN SMALL LETTER D WITH HOOK AND PALATAL HOOK. Figure 4.

ʤ̡ 1DF2E LATIN SMALL LETTER DZ DIGRAPH WITH PALATAL HOOK. Figure 5 *ff*, Figure 25.

ð̡ 1DF2F LATIN SMALL LETTER ETH WITH PALATAL HOOK. Figure 8 *ff*.

ɢ̡ 1DF30 LATIN LETTER SMALL CAPITAL G WITH PALATAL HOOK. Figure 14.

ɣ̡ 1DF31 LATIN SMALL LETTER GAMMA WITH PALATAL HOOK. Figure 11, Figure 15 *ff*, Figure 25.

ħ̡ 1DF32 LATIN SMALL LETTER H WITH STROKE AND PALATAL HOOK. Figure 30.

ɸ̡ 1DF33 LATIN SMALL LETTER PHI WITH PALATAL HOOK. Figure 2 *ff*.

q̡ 1DF34 LATIN SMALL LETTER Q WITH PALATAL HOOK. Figure 14, Figure 18 *ff*.

ʁ̡ 1DF35 LATIN LETTER SMALL CAPITAL R WITH PALATAL HOOK. Figure 32.

ʁ̡ 1DF36 LATIN LETTER SMALL CAPITAL INVERTED R WITH PALATAL HOOK. Figure 14, Figure 19.

ɾ̡ 1DF37 LATIN SMALL LETTER R WITH TAIL AND PALATAL HOOK. Figure 20.

ʦ̡ 1DF38 LATIN SMALL LETTER TS DIGRAPH WITH PALATAL HOOK. Figure 5 *ff*, Figure 22 *ff*.

ʋ̡ 1DF39 LATIN SMALL LETTER V WITH HOOK AND PALATAL HOOK. Figure 28 *ff*.

ʕ̡ 1DF3A LATIN LETTER PHARYNGEAL VOICED FRICATIVE WITH PALATAL HOOK. Figure 31.

(Deferred)

Five attested characters are deferred pending decisions by the IPA and Unicode:

β̡ GREEK/LATIN SMALL LETTER BETA WITH PALATAL HOOK. Figure 3, Figure 10.

θ̡ GREEK/LATIN SMALL LETTER THETA WITH PALATAL HOOK. Figure 27.

χ̡ GREEK/LATIN SMALL LETTER CHI WITH PALATAL HOOK. Figure 14, Figure 32 *ff*.

g̡ ɡ̡ LATIN SMALL LETTER G WITH STROKE AND PALATAL HOOK. Figure 11 *ff*, Figure 17.

ʃ̡ LATIN SMALL LETTER ESH WITH RETROFLEX HOOK AND PALATAL HOOK. Figure 21.

For ⟨ᵦ̧ ᶿ̧ ᵪ̧⟩, the SAH has recommended that adoption of any further Greek-derived IPA letters be deferrred until the IPA decides whether they should be encoded as Latin or Greek characters. Character-naming will depend on whether they are identified as being based on 03B2 GREEK SMALL LETTER BETA β or A7B5 LATIN SMALL LETTER BETA β, on 03C7 GREEK SMALL LETTER CHI χ or AB53 LATIN SMALL LETTER CHI χ, on 03B8 GREEK SMALL LETTER THETA θ or on the proposed Latin theta. For the last, note that 019B LATIN SMALL LAMBDA WITH STROKE ƛ was encoded as Latin long before sA7DB LATIN SMALL LETTER LAMDA ꞎ was disunified from 03BB GREEK SMALL LETTER LAMDA λ.

Script G with stroke and palatal hook has two attested variants: tail-stroke ⟨ɠ̧⟩ and the more visually distinctive bowl-stroke ⟨ɡ̧⟩. Naming of this character would be facilitated if Unicode first encoded ⟨ɠ⟩ *script G with stroke*, which was officially used by the IPA until 1931 (Figure 1).

Figure 1. IPA (1921: 8). Historical fricatives ⟨x ɡ⟩ in the place of modern ⟨x ɣ⟩. Palatal-hook ⟨ɡ̧⟩ is thus equivalent to later ⟨ɣ̧⟩.

Para-IPA use, such as ⟨ʃ̧⟩ with both palatal and retroflex hooks, is uncommon (voiced *ʒ̧ remains unattested), and is not proposed pending better attestation of current need.

Properties

1DF2D;LATIN SMALL LETTER D WITH HOOK AND PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF2E;LATIN SMALL LETTER DZ DIGRAPH WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF2F;LATIN SMALL LETTER ETH WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF30;LATIN LETTER SMALL CAPITAL G WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF31;LATIN SMALL LETTER GAMMA WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF32;LATIN SMALL LETTER H WITH STROKE AND PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF33;LATIN SMALL LETTER PHI WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF34;LATIN SMALL LETTER Q WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;

1DF35;LATIN LETTER SMALL CAPITAL R WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF36;LATIN LETTER SMALL CAPITAL INVERTED R WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF37;LATIN SMALL LETTER R WITH TAIL AND PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF38;LATIN SMALL LETTER TS DIGRAPH WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF39;LATIN SMALL LETTER V WITH HOOK AND PALATAL HOOK;Ll;0;L;;;;;N;;;;;
1DF3A;LATIN LETTER PHARYNGEAL VOICED FRICATIVE WITH PALATAL HOOK;Ll;0;L;;;;;N;;;;;

DoNotEmit data

For historical reasons, IPA letters with palatal hook are not canonically equivalent to the letter plus the palatal hook diacritic. They should thus be listed in DoNotEmit.txt.

0257 0321; 1DF2D; Precomposed_Form # LATIN SMALL LETTER D WITH HOOK, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER D WITH HOOK AND PALATAL HOOK
02A3 0321; 1DF2E; Precomposed_Form # LATIN SMALL LETTER DZ DIGRAPH, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER DZ DIGRAPH WITH PALATAL HOOK
00F0 0321; 1DF2F; Precomposed_Form # LATIN SMALL LETTER ETH, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER ETH WITH PALATAL HOOK
0262 0321; 1DF30; Precomposed_Form # LATIN LETTER SMALL CAPITAL G, COMBINING PALATALIZED HOOK BELOW; LATIN LETTER SMALL CAPITAL G WITH PALATAL HOOK
0263 0321; 1DF31; Precomposed_Form # LATIN SMALL LETTER GAMMA, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER GAMMA WITH PALATAL HOOK
0127 0321; 1DF32; Precomposed_Form # LATIN SMALL LETTER H WITH STROKE, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER H WITH STROKE AND PALATAL HOOK
0278 0321; 1DF33; Precomposed_Form # LATIN SMALL LETTER PHI, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER PHI WITH PALATAL HOOK
0071 0321; 1DF34; Precomposed_Form # LATIN SMALL LETTER Q, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER Q WITH PALATAL HOOK
0280 0321; 1DF35; Precomposed_Form # LATIN LETTER SMALL CAPITAL R, COMBINING PALATALIZED HOOK BELOW; LATIN LETTER SMALL CAPITAL R WITH PALATAL HOOK
0281 0321; 1DF36; Precomposed_Form # LATIN LETTER SMALL CAPITAL INVERTED R, COMBINING PALATALIZED HOOK BELOW; LATIN LETTER SMALL CAPITAL INVERTED R WITH PALATAL HOOK
027D 0321; 1DF37; Precomposed_Form # LATIN SMALL LETTER R WITH TAIL, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER R WITH TAIL AND PALATAL HOOK
02A6 0321; 1DF38; Precomposed_Form # LATIN SMALL LETTER TS DIGRAPH, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER TS DIGRAPH WITH PALATAL HOOK
028B 0321; 1DF39; Precomposed_Form # LATIN SMALL LETTER V WITH HOOK, COMBINING PALATALIZED HOOK BELOW; LATIN SMALL LETTER V WITH HOOK AND PALATAL HOOK

0295 0321; 1DF3A; Precomposed_Form # LATIN LETTER PHARYNGEAL VOICED FRICATIVE, COMBINING PALATALIZED HOOK BELOW; LATIN LETTER PHARYNGEAL VOICED FRICATIVE WITH PALATAL HOOK

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Chart

Greyed out cells are assigned (medium grey) or proposed elsewhere (light grey).

Latin Extended-G

1DF00 **1DFFF**

	1DF0	1DF1	1DF2	1DF3	1DF4	1DF5	1DF6	1DF7	1DF8	1DF9	1DFA	1DFB	1DFC	1DFD	1DFE	1DFF
0	fᵯ	ɤ	ʤ	ɢ												
1	ɒ	ɦ	ʤ	ɣ												
2	ɔ	ʤ	ʨ	ɦ												
3	ɤ	ɟ	ʨ	ɸ												
4	ɬ	ŋ	ʨ	q												
5	ɮ	ɟ	ɖ	ʀ												
6	ɤ	ɾ	ɭ	ɻ												
7	ɑ	ʧ	ɲ	ɾ												
8	ɻ	ʒ	ɾ	ʦ												
9	f	ʤ	ʂ	ʏ												
A	ǃ	i	ʈ	ʃ												
B	ʃ	ɒ	ʤ													
C	ʃ	ʧ	ʧ													
D	ʒ	ɕ	ʃ													
E	ɮ	ɕ	ʤ													
F	ɕ	ʤ	ʤ													

Figures

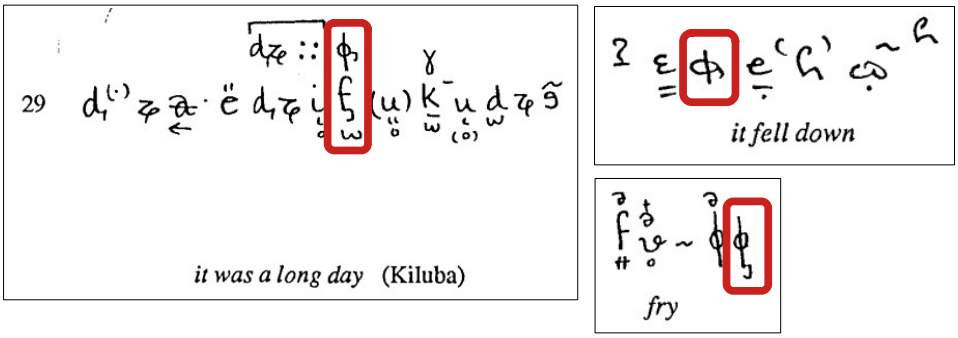


Figure 2. Kelly & Local (1989: 78, 121, 179). [ɸ̠] contrasting with [f̠]. Where the two letters are stacked, both phonetic values were recorded. The placement of the hook varies in handwriting from the bowl to the descender. In a font, it would be preferable to attach it to the bowl in order to leave room for diacritics under the letter. The languages are Tchiluba, Twi, and English ([ɸ̠] as a devoiced allophone of the /r/ in *fry* in the speech of a young child).

Most speakers of contemporary Irish English produce sounds of the /p, b, f, v, w, ʍ, m/ group in ways that are not significantly different from general patterns found elsewhere. Traditional dialect, however, presents a different picture. Henry (1957: 59), whose study of traditional dialect in Roscommon is based on fieldwork done in the 1940s, states quite simply that "in good dialect usage the variants of the *f*- and *v*-phonemes are bi-labial fricatives (ɸ, ɸ̠, β, β̠ ...) as in Ir[ish]". The use of [ɸ] extends to /ʍ/ in this data as well. Examples cited by Henry (1957:

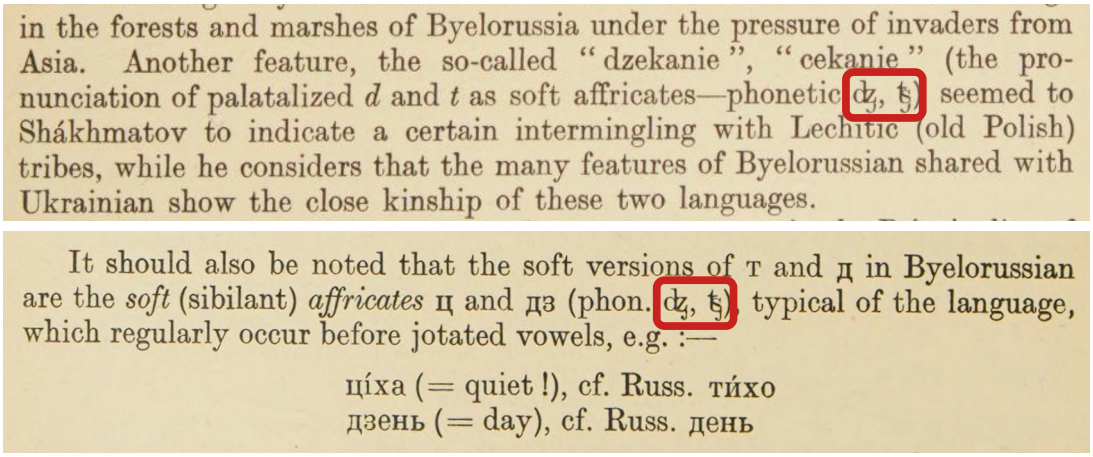
Figure 3. Kallen (2013: 49). [ɸ̠] and [β̠] in Irish English.

Ce qui permet de constituer ce tableau (transcription phonétique) :

	LABIALES	APICALES	PALATALES	VELAIRES	LARYNGALES
aspirées	ph	th	ch	kh	
sourdes	p	t	c	k	ʔ
sonores	b	d	ɖ	g	
glottalisées	ɓ	ɗ	ƈ		
nasales	m	n	ɲ	ŋ	
fricatives		s			h
semi-voyelles	w		j		
liquides			r	l	

La palatale glottalisée est moins répandue chez les Proto-indochinois ; les rares écrits qui la reconnaissent la notent *dj*, ce qui la confond avec le *j* souvent francisé en *dj* (voir Djarai) ; elle se note ƈ, à la suite de ɓ et ɗ. Elle n'est pas aisée à prononcer ; les Vietnamiens s'efforcent de la rendre par un j, ce qui peut amener de redoutables confusions de sens.

Figure 4. Dournes (1976: 16, 19). Implosive [ƈ] in Jarai.

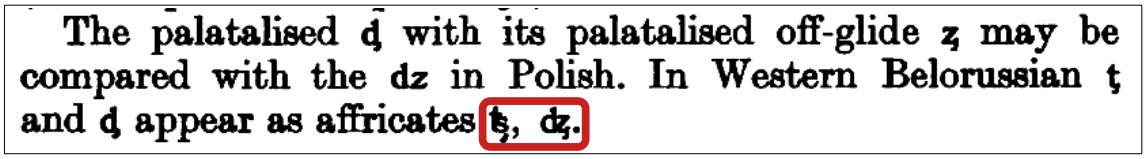


in the forests and marshes of Byelorussia under the pressure of invaders from Asia. Another feature, the so-called "dzekanie", "cekanie" (the pronunciation of palatalized *d* and *t* as soft affricates—phonetic d͡ʒ, t͡ʃ) seemed to Shákhmatov to indicate a certain intermingling with Lechitic (old Polish) tribes, while he considers that the many features of Byelorussian shared with Ukrainian show the close kinship of these two languages.

It should also be noted that the soft versions of т and д in Byelorussian are the *soft* (sibilant) *affricates* ц and дз (phon. d͡ʒ, t͡ʃ), typical of the language, which regularly occur before jotated vowels, e.g. :—

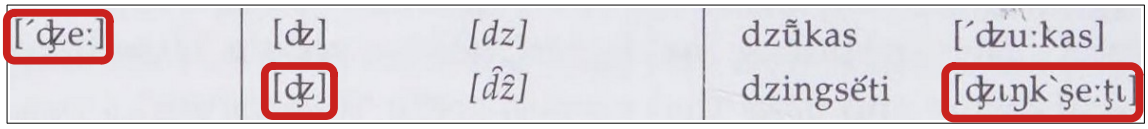
ці́ха (= quiet !), cf. Russ. ти́хо
дзень (= day), cf. Russ. день

Figure 5. de Bray (1951: 129, 134). Affricates [d͡ʒ] and [t͡ʃ] in Belarusian.



The palatalised d̨ with its palatalised off-glide z̨ may be compared with the dz in Polish. In Western Belorussian t̨ and d̨ appear as affricates t͡ʃ, d͡ʒ.

Figure 6. Boyanus (1955: 17). Affricates [d͡ʒ] and [t͡ʃ] in Belarusian.



[ˊd͡ʒe:]	[dz]	*[dz]*	dzũkas	[ˊdzu:kas]
	[d͡ʒ]	*[d͡ʒ]*	dzingsěti	[d͡ʒɪŋkˋʂe:ʈɪ]

Figure 7. Ambrazas (2006: 16). [d͡ʒ] in Lithuanian.

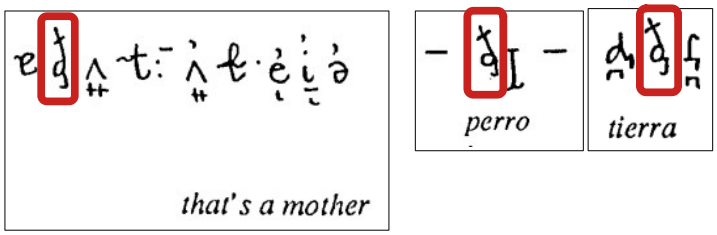


Figure 8. Kelly & Local (1989: 131, 171). [ɽ̠] in Malayalam (left) and in the production of Spanish /r/ in the speech of a 4-year-old.

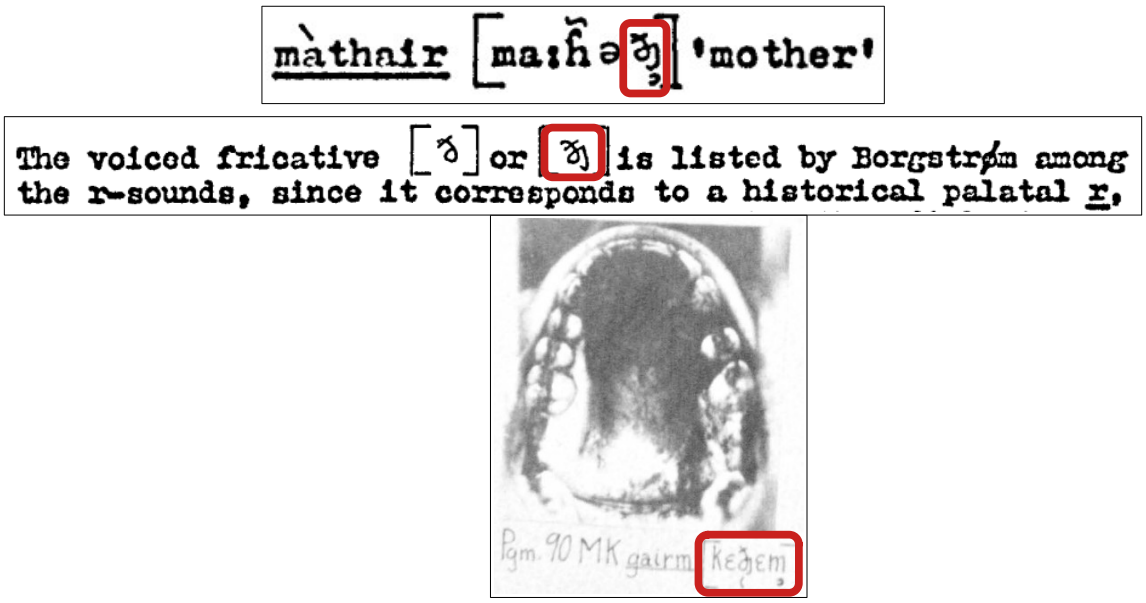


Figure 9. Shuken (1980: 48, 153, 288). [ʒ̝] in Scottish Gaelic, including a palatogram.

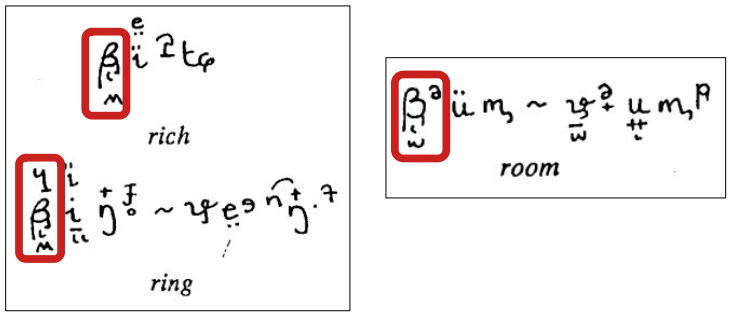


Figure 10. Kelly & Local (1989: 154, 245). [β̞] (and also [ʋ̞]) in English in the speech of a 5-year-old. The diacritic ◌̞ under the letter is the old IPA diacritic for 'open.'

j	[j-][1]	Andersen 1954:306c: [j]. (Storm 1908:138; Nes 1978:161).
ɡ̵	[ɣ̞][1]	(Storm i oppskr. 1883-84, brukt i 1892:XI; Skulerud 1922:429; Nes 1978:161).
x	[x]	(Storm 1908:143).
ɣ	[ɣ, ʁ][1]	Andersen 1954:306c: [ɣ]. (Storm 1908:144).

Figure 11. Nes (1982: 24). The transcription ⟨ɡ̵⟩ and its IPA equivalent ⟨ɣ̞⟩ for Norwegian. Barred ⟨g⟩ was the IPA convention for a velar fricative before the adoption of modern ⟨ɣ⟩. The placement of the bar is not distinctive; see next figure.

The consonant phonemes of Lithuanian (some of which are marginal) can be given in the following table:

	labial	dental	post-alveolar	palatal	velar
plosives	p b p̪ b̪	t d t̪ d̪			k g k̪ g̪
fricatives	f f̪	s z s̪ z̪	ʃ ʒ ʃ̪ ʒ̪		x ɣ x̪ ɣ̪
affricates		t͡s d͡z t͡s̪ d͡z̪	t͡ʃ d͡ʒ t͡ʃ̪ d͡ʒ̪		

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German *ich-Laut*. The voiced counterparts [ɣ] and [ɣ̪] are pronounced with activization of the vocal cords.

As demonstrated in the above table the [r] and [r̪] are dentals.

Figure 12. Mathiassen (1996: 21, 23). ⟨ɣ̪⟩ for Lithuanian. (The bar is missing in the table, but obvious from context and clarified in the text at bottom.) Old-style ⟨ɣ⟩ is used for modern ⟨ɣ̞⟩.

the five most notable of these subsidiary sounds by separate symbols: ʌ̯, g̪, ɣ̪, e, ẽ. These sounds may be considered as belonging to the l, x̪, x, ɛ, and ɛ̃

30. x̪, g̪. Fricatives formed at the same place as k̪ and g̪. x̪ is breathed, ɣ̪ voiced.

Figure 13. Arend-Choiński (1924: 8, 14). ⟨ɣ̪⟩ for Polish.

/kʰ k’ x ɣ k̪ g̪ k̪ʰ k̪’ q ɢ qʰ q’ χ ʁ q̪ ɢ̪ q̪ʰ q̪’ χ̪ ʁ̪ ʔ h/

Es sind dies 1. sämtliche Formative aus 1.1.4: /rat/, /req/, /rak/, /wirt/, /nik/, /murk/, /nek/, /jak/, /net/, /wik/; 2. sämtliche Formative aus 1.5: /myɢ̪/, /raɢ/, /reɢ/, /maɢ/, /qaɢ/, /naɢ̪/ 3. einzelne Formative aus verschiedenen Gruppen: /ɣad/ (1.2.1), /ɢatʰ/ (2.1), /ɣiɣ/, /miɾɣ/, /raɣ/, /weɾɣ/ (2.2).

Figure 14. Job (1981: 280, 295). ⟨q̪ ɢ̪ χ̪ ʁ̪⟩ in a list of Lezgin consonants; ⟨ɢ̪⟩ in /myɢ̪/, /naɢ̪/. The diacritic is rather crude, and is placed above letters with a descender.

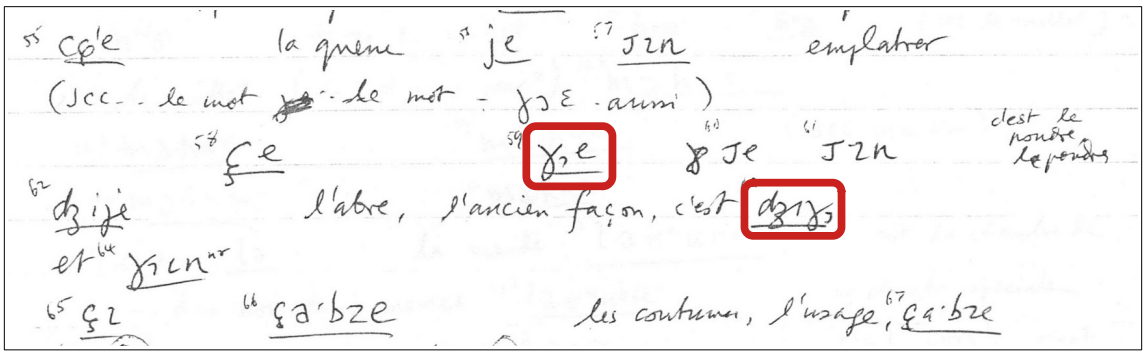


Figure 15. Catford (1970b). [ɣ̟] in Kabardian.

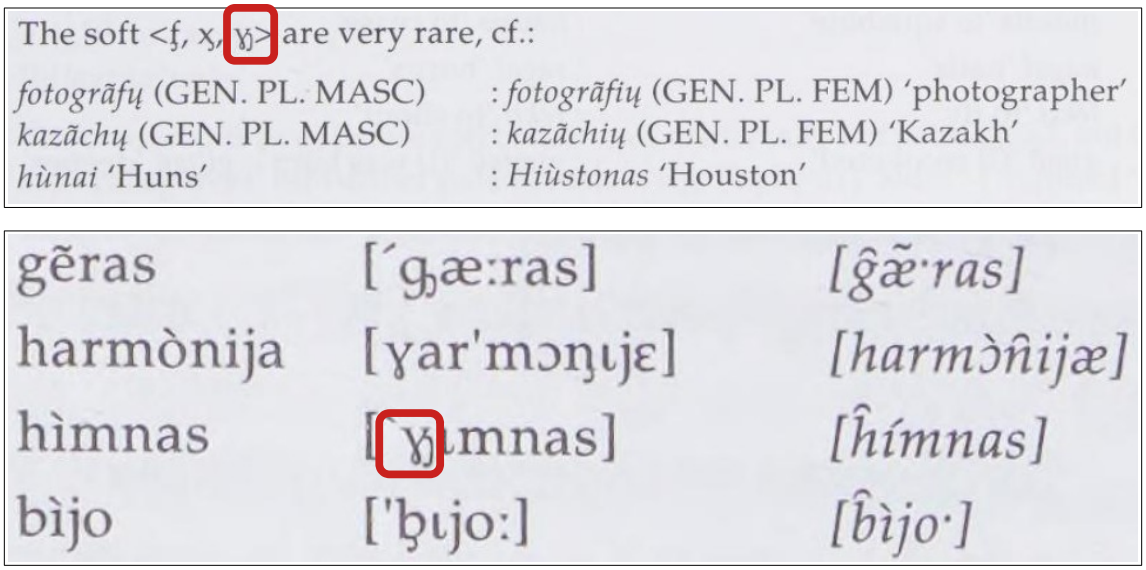


Figure 16. Ambrazas (2006: 16). [ɣ̟] in Lithuanian.

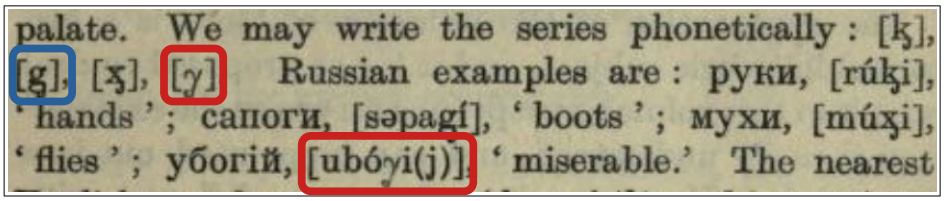


Figure 17. Trofimov & Scott (1918: 17). Greek gamma with palatal hook, ⟨ɣ̟⟩. This predates the adoption of gamma by the IPA in 1931. Note also the two-loop ⟨g̟⟩ (blue).

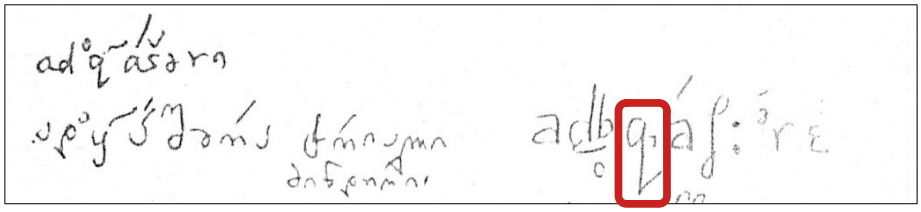


Figure 18. Catford (1977a, entry 50). [ɢ̆] in Abkhaz. Catford's hand transcription is adb̥ɢ̆áʃːˢrɛ with ⟨ɢ̆⟩, but the html digitiztion of the page has [ad̥b̥ɢ̆ʲáʃːˢrɛ] with ⟨ɢʲ⟩, presumably due to a lack of Unicode support. (For ⟨ˢ⟩, the digitization resorts to the PUA character of SIL fonts, but ⟨ɢ̆⟩ is not in the PUA.)

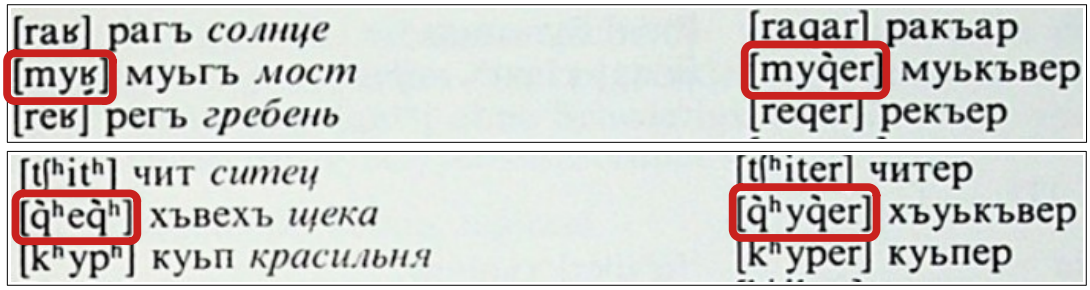


Figure 19. Job (1981: 281, 283). ⟨ɣ̌⟩ and ⟨ɢ̆⟩ for Lezgin. The diacritic is rather crude, and is placed above letters with a descender like *q*.

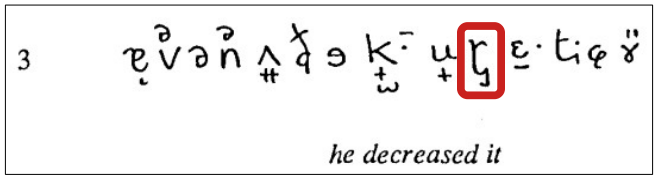


Figure 20. Kelly & Local (1989: 178). [ɽ̆] in Malayalam. A rare retroflex letter with palatal hook.

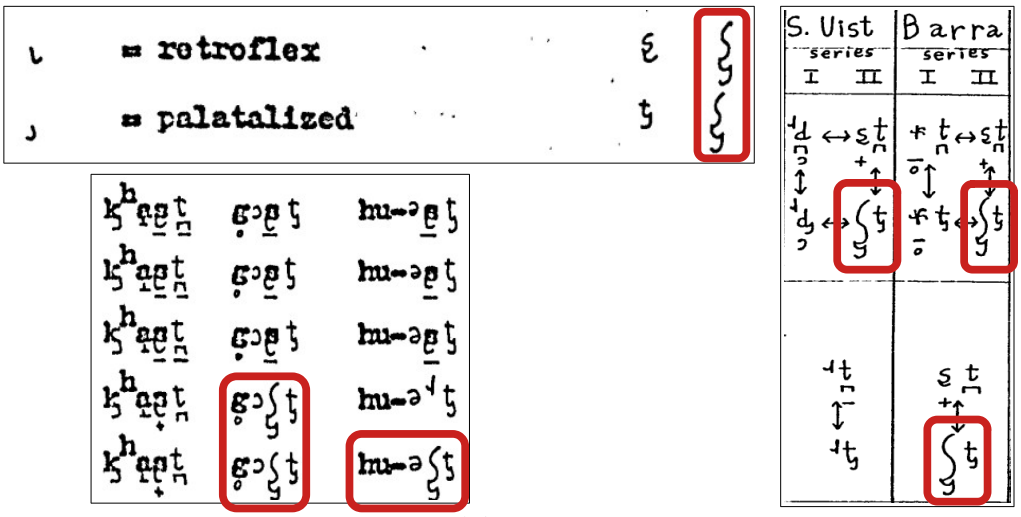


Figure 21. Shuken (1980: 71–73). ⟨ʃ̡⟩ for an allophone of Scottish Gaelic retroflex /ʂ/ in a palatal environment. Note the letter is listed as both *retroflex* and *palatalized* (top). The author adds a palatal hook to the retroflex tail of ⟨ʃ̡⟩, but that placement is not practical for a digital font if the letter is to take diacritics, so a typographer might prefer palatalized ⟨ʃ̡⟩ with a retroflex hook: ⟨ʃ̡⟩.

GROT thought that when the letter *я* followed the vowel *u* after the consonantal combination *нц*, the [ʦ] softened before [i], and the [n] in its turn softened before [ʧ]. He concluded that in this case the balance was turned by *я*.[10] Table 3 compares the pronunciation of three words containing *нцu* when followed by *я* with that of the same three words when the combination is followed by *u* or *ю*.

[10] YA. K. GROT, *op. cit.*, p. 329.
[11] i. e. in this table only, 16 [nʦ] and 1 [nʧ]
[12] V. A. BOGORODITSKIY, *op. cit.*, p. 273.
[13] G. O. VINOKUR, *Russkoye stsenicheskoye proiznosheniye*, Moscow 1948, p. 64.

Figure 22. Drage (1967: 125 and fn). The affricate [ʧ] in Russian.

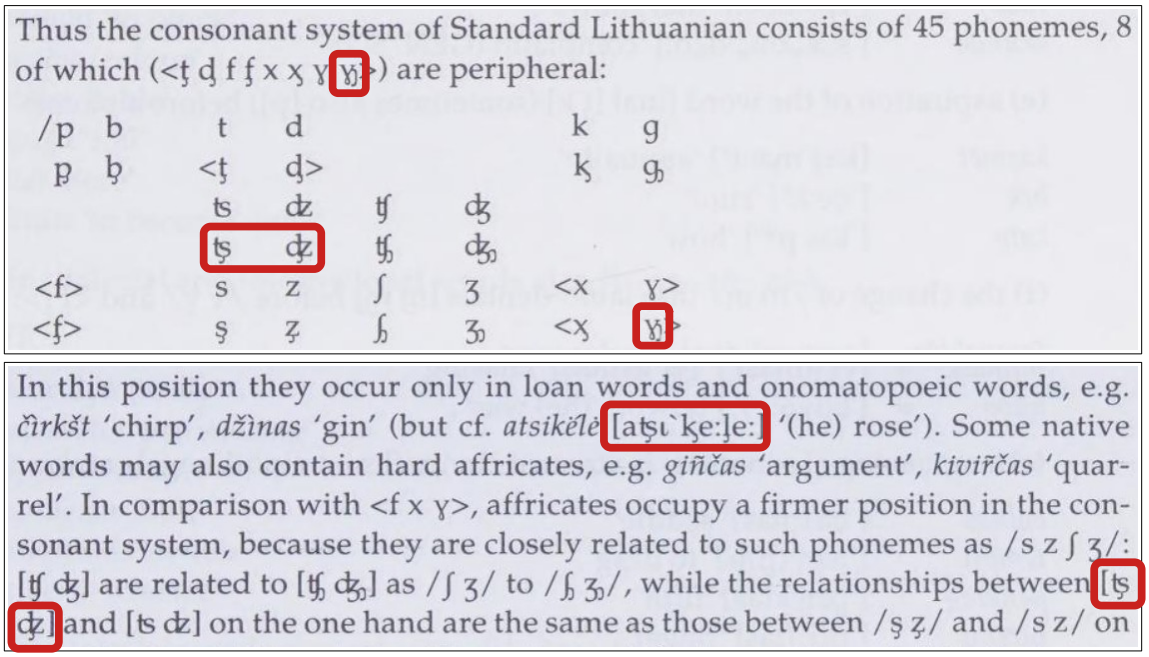
isʌ'fʂemi dvʌ'rovimi. 'nɛkətəriji dʌ'gadəvəlis ʌ'biʂtinɛ iutɣɛr'ʒdali ʃtəɣi'novnikəm ʂɛ'vo u'ʒasnəvə 'ɦeʂʂtɣijə bil sam *du'brofskəj, 'dɣiʒiməj 'zlobəj iʌ'tʃtʃæjɪnijəm.

a ɛs 'puʃkin — du'brofski
trənskri'ɦirəvəl D. W.

Figure 23. Ward (1959: 47). ⟨ʧ⟩ in a transcription of Pushkin.

[ts]	*[ts]*	cùkrus	['ʦokrɔs]
[ʦ]	*[t̂ŝ]*	cỹpti	[ˊʦi:pʧɪ]

Figure 24. Ambrazas (2006: 16). [ʦ] in Lithuanian.



Thus the consonant system of Standard Lithuanian consists of 45 phonemes, 8 of which (<ʦ ʤ f ʃ x ʒ ɣ ɣʲ>) are peripheral:

/p	b	t	d			k	g
pʲ	bʲ	<tʲ	dʲ>			kʲ	gʲ
		ʦ	ʤ	ʧ	ʤ		
		ʦʲ	ʤʲ	ʧʲ	ʤʲ		
<f>		s	z	ʃ	ʒ	<x	ɣ>
<fʲ>		sʲ	zʲ	ʃʲ	ʒʲ	<xʲ	ɣʲ>

In this position they occur only in loan words and onomatopoeic words, e.g. *čirkšt* 'chirp', *džìnas* 'gin' (but cf. *atsikẽlė* [atʂɪˋkʲe:ɻe:] '(he) rose'). Some native words may also contain hard affricates, e.g. *giñčas* 'argument', *kiviřčas* 'quarrel'. In comparison with <f x ɣ>, affricates occupy a firmer position in the consonant system, because they are closely related to such phonemes as /s z ʃ ʒ/: [ʧ ʤ] are related to [ʧʲ ʤʲ] as /ʃ ʒ/ to /ʃʲ ʒʲ/, while the relationships between [ʦʲ ʤʲ] and [ʦ ʤ] on the one hand are the same as those between /sʲ zʲ/ and /s z/ on

Figure 25. Ambrazas (2006: 39). <ʦʲ ʤʲ ɣʲ> in Lithuanian.

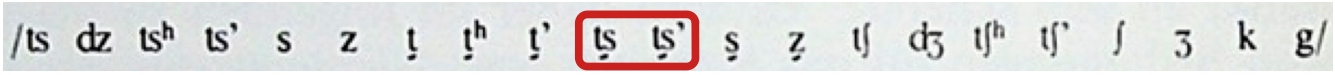


Figure 26. Job (1981: 280). <ʦʲ> and <ʦʲʼ> for Lezgin. The palatal diacritic is crude.

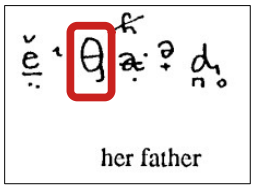


Figure 27. Kelly & Local (1989: 164). [ɵ] in Welsh.

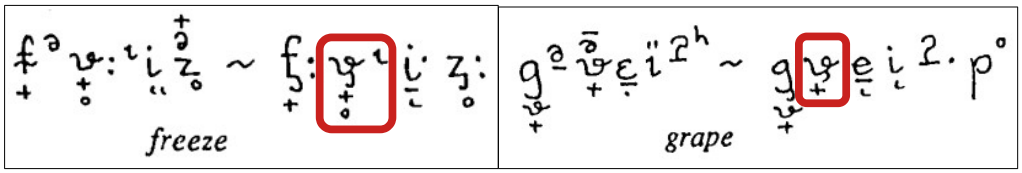


Figure 28. Kelly & Local (1989: 257, 260) [ɻ] for English /r/ in the speech of a 5-year-old.

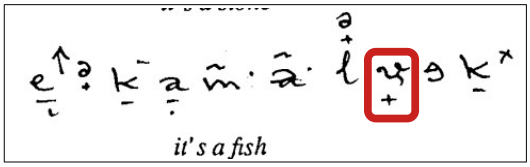


Figure 29. Kelly & Local (1989: 123) [ɻ] in Sinhalese.

pharyngal fricative /ħʷ/. This is actually realised as [ħ̞ᵘ] — that is [ħ] with simultaneous labial and palatal [ɥ]-like approximant articulation, as in /aˈħʷəħʷ/ 'dove' [aˈħ̞ᵘyħ̞ᵘ]. What is traditionally regarded as the voiced counterpart of /ħʷ/, hencein

Figure 30. Catford (1972: 680). [ħ̞ᵘ] for palatalized /ħʷ/ in Abkhaz.

Thus in the cognate words, Abkhaz /aʕʷara/ 'to dry' [aɥərə] and Abazin /ʕʷa/ 'dry' [ʕ̞ᵘa] we have the same labial+palatal [ɥ]-type labialisation.

Figure 31. Catford (1972: 680). [ʕ̞ᵘ] for palatalized /ʕʷ/ in Abkhaz.

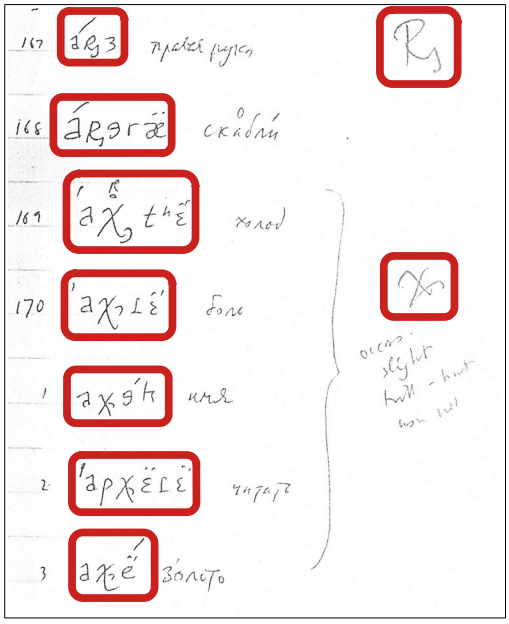


Figure 32. Catford (1970a). Entries for [ʀ̠] and [χ̟] in Abkhaz.

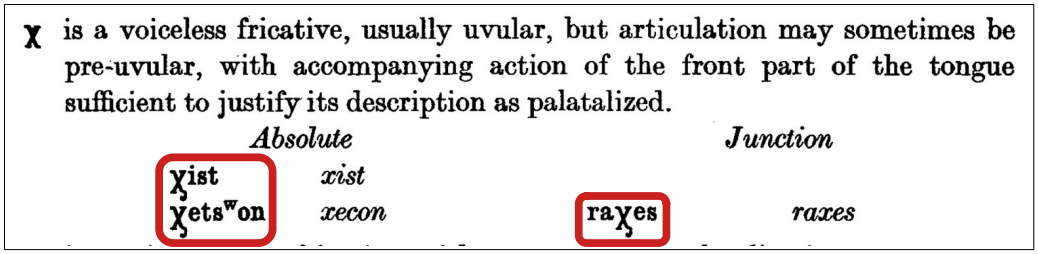


Figure 33. Henderson (1949: 51). [χ̟] in Digor Ossetian. The illustrated glyph would not be a good shape for a digital font because it would leave little room for diacritics under the letter.

Figure 34. Job (1981: 281). [χ̟] in Lezgin. The diacritic is rather crude, and is placed above letters with a descender like χ.

ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html for guidelines and details before filling this form.
Please ensure you are using the latest Form from std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html.
See also std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest *Roadmaps*.

A. Administrative

1. **Title:** *Letters with palatal hook*
2. Requester's name: *Kirk Miller*
3. Requester type (Member body/Liaison/Individual contribution): *individual*
4. Submission date: *2024 March 28*
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal: *yes*
   (or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters):
      Proposed name of script:
   b. The proposal is for addition of character(s) to an existing block: *yes*
      Name of the existing block: *Latin Extended-G*
2. Number of characters in proposal: *14*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary x B.1-Specialized (small collection) B.2-Specialized (large collection)
   C-Major extinct D-Attested extinct E-Minor extinct
   F-Archaic Hieroglyphic or Ideographic G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided? *yes*
   a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? yes
   b. Are the character shapes attached in a legible form suitable for review? *yes*
5. Fonts related:
   a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard? *Kirk Miller*
   b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.): *SIL (Gentium Release)*
6. References:
   a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? *yes*
   b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? *yes*
7. Special encoding issues:
   Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? *yes*

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at www.unicode.org for such information on other scripts. Also see Unicode Character Database (www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

[1] Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? *no*
   If YES explain
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?
   If YES, with whom? *author is a member of the user community*
   If YES, available relevant documents:
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
   Reference:
4. The context of use for the proposed characters (type of use; common or rare) *phonetic*
   Reference:
5. Are the proposed characters in current use by the user community? *yes*
   If YES, where? Reference: *see illustrations*
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? *no*
   If YES, is a rationale provided?
   If YES, reference:
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? *yes*
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? *no*
   If YES, is a rationale for its inclusion provided?
   If YES, reference:
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? *yes*
   If YES, is a rationale for its inclusion provided? *yes*
   If YES, reference: *dynamic generation of characters with U+0321 COMBINING PALATALIZED HOOK BELOW should be avoided; atomic Unicode characters are preferable*
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? *no*
    If YES, is a rationale for its inclusion provided?
    If YES, reference:
11. Does the proposal include use of combining characters and/or use of composite sequences? *no*
    If YES, is a rationale for such use provided?
    If YES, reference:
    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? *no*
    If YES, reference:
12. Does the proposal contain characters with any special properties such as control function or similar semantics? *no*
    If YES, describe in detail (include attachment if necessary)
13. Does the proposal contain any Ideographic compatibility characters? *no*
    If YES, are the equivalent corresponding unified ideographic characters identified?
    If YES, reference: