1. In 1912, Antoine Meillet wrote: "M. F. de Saussure a remarqué et enseigné dans ses cours à l’École des Hautes Études qu’une racine indo-européenne n’admet pas la présence simultanée d’une sourde et d’une sonore aspirée: on peut avoir *beudh- ou *bheudh-, mais non *peudh-; *bheudh- ou *bheudh-, mais non *bheut-. La justesse de cette belle remarque est aisée à vérifier en parcourant les dictionnaires étymologiques: on verra immédiatement que les exemples contraires se trouvent dans des mots dont l’emploi est limité à une seule langue, ou bien qu’il s’agit d’étymologies incertaines ou fausses". Later, in his Introduction, Meillet (1937, 174) added to Saussure’s rule that "une racine qui commence par *s plus consonne sourde peut finir par une sonore aspirée, ainsi: skr. stīghmune ‘il monte’, v.sl. stignq ‘j’irai’, gr. στείγω, got. steiga ‘je monte’, v.irl. tiagu ‘je vais’".

In more recent handbooks, however, Saussure’s restriction on the root structure is only admitted for roots of the type *tedh-, *deth- (cf. Mayrhofer 1986, 117, Beekes 1995, 162). It looks as if the authors consider *TeRDh-/*DeRT- roots possible. It is not my intention to analyze the whole Indo-European evidence¹, but a short survey of the Vedic material will suffice to show that, in general, *TeRDh- roots are also subject to Saussure’s rule².

2. The evidence presented below is a collection of all words from Mayrhofer’s KEWA and EWAia with initial k, c, t, p, s, which have

---

¹ A study of the Indo-European evidence contained in Pokorny’s dictionary will be presented in a forthcoming article by M. de Vaan.

² To my knowledge, there are no *D*eRT- roots in Vedic. There are three roots of the type *D*Re(R)T- (v. bhrāti- ‘to fall off’, v. bhrās- ‘to be sharp’, v. bhrās- ‘to shine’), all of a conspicuously similar structure and without secure IE. etymology.
a voiced aspirate in the same or following syllable. This is a heterogeneous collection comprising many words which are of no use for our purpose, i.e. words of probable non-Indo-European origin, words of unclear meaning or etymology and words where the voiced aspirate belongs to the suffix or to the second member of a compound.

2.1. Words of probable non-Indo-European origin:
kakūh- f. 'summit, peak', kakubh- 'eminent', kakubhā- (AV 8.6.10) 'humped (?)' (cf. L u b o t s k y 1995, 128).
kandhara- (Up.+) m. 'neck'.
kukundha- (AV) 'kind of spook'.
kābha- f. 'name of a river'.
kubhā- m. (RV +) 'pot', kumbhī- (AV +) f., Av. xumha- 'id.' must be a Wanderwort, cf. Gr. κούβη 'drinking-vessel', κούμβος m. 'bowl'.

2.2. Words/roots of unclear etymology or meaning:
kubhunyā- (RV 5.52.12) '?'.
(visā)-kuh-, -kuha- (S.+) 'zwiespaltig' (cf. S h a r m a 1959, 103, 269 f.).
ksiadh- f. 'hunger', Av. šud- 'id.' The IE. etymology is uncertain.
śībha- (AV 7.90.2) '?'.
śigṛha- adj. (VS+) 'quick, swift'. The connection with Russ. sigat 'to jump' and OE. higian 'to exert oneself, strive, hasten' is very doubtful. OE. higian is cognate with MiD hīgen, MoD högen 'to pant'. As already indicated in F r a n c k, W ij k's Dutch etymological dictionary, the meaning 'to pant' seems to be primary for the Germanic words, so that they are probably of onomatopoetic origin. The Russian word is suspect because there are no other cognates in Slavic (except for Byelorussian sihacı). Moreover, it is only attested in the Southern and Western dialects, i.e. exactly in those dialects where i merged with 'a (<>e) in pretonic position. It is therefore very likely that P r e o b r a ż e n s k i j's (2, 284) etymology explaining sigat from *segatī is correct (pace V a s m e r s.v.). Many years before A. P r e o b r a ż e n s k i j, V. D a l' wrote in his dictionary (I used the second edition from 1880) that 'sigat, signat' is derived from sjagat'3 and added: 'also pronounced sjagät, sjagnät', combining two meanings: to jump and to reach smth.' (translation mine).
śibham 'swiftly, quickly' (RV +). In Br., also śibha-, śibhaya- adj. are attested, used as a synonym of the preceding word, cf. MS, II, 9, 5, 124. 14 nāmaḥ śibhāya ca śiṣṭhrāya ca.
śiṣṭhrā- (RV 4.58.7) '?'.

√śrambh- 'to trust' (ep.+). The meaning of ni-śrīmabhā- (RV 6.55.6) is uncertain. R en o u (EVP XV, 150) translates 'soumis' and remarks "nuance possiblement comparable à nīmgra nīmśa nikāma". G e l d n e r put "stolzerrande" with a question mark in his text.
√sīghā- 'to confide, trust' (Br.+).
śvābhra- m. 'gap, hole', Ir. ñub-, MP, MoP sūrta-, sūmt- 'to pierce, bore' (M a c K e n z i e 1971, 78), Pashto sūrāi < *subra-ka- 'hole' (M o r g e n s t i e r n e 1927, 70). The IE. etymology is unclear (but cf. below).

2.3. Voiced aspirata belongs to the suffix or to the second member of a compound: ka-dāhā 'where', kār-hi 'when', tār-hi 'then' (cf. also etār-hi), kū-ha 'where' < *ku-dha, śrād-dhā- f. 'trust, confidence'.

3. The reliable evidence is the following:
krađhī- adj. 'mutilated, short', which has s-mobile, cf. n. 'species' for the Germanic family of words
'id.' The IE. etymology is uncertain. R e n o u (EVP XV, 150) translates 'soumis' and remarks "nuance possiblement comparable à nīmgra nīmśa nikāma". G e l d n e r put "stolzerrande" with a question mark in his text.
√sīghā- 'to confide, trust' (Br.+).
śvābhra- m. 'gap, hole', Ir. ñub-, MP, MoP sūrta-, sūmt- 'to pierce, bore' (M a c K e n z i e 1971, 78), Pashto sūrāi < *subra-ka- 'hole' (M o r g e n s t i e r n e 1927, 70). The IE. etymology is unclear (but cf. below).

√śrambh- 'to trust' (ep.+). The meaning of ni-śrīmabhā- (RV 6.55.6) is uncertain. R en o u (EVP XV, 150) translates 'soumis' and remarks "nuance possiblement comparable à nīmgra nīmśa nikāma". G e l d n e r put "stolzerrande" with a question mark in his text.
√sīghā- 'to confide, trust' (Br.+).
śvābhra- m. 'gap, hole', Ir. ñub-, MP, MoP sūrta-, sūmt- 'to pierce, bore' (M a c K e n z i e 1971, 78), Pashto sūrāi < *subra-ka- 'hole' (M o r g e n s t i e r n e 1927, 70). The IE. etymology is unclear (but cf. below).

√śrambh- 'to trust' (ep.+). The meaning of ni-śrīmabhā- (RV 6.55.6) is uncertain. R en o u (EVP XV, 150) translates 'soumis' and remarks "nuance possiblement comparable à nīmgra nīmśa nikāma". G e l d n e r put "stolzerrande" with a question mark in his text.
√sīghā- 'to confide, trust' (Br.+).
śvābhra- m. 'gap, hole', Ir. ñub-, MP, MoP sūrta-, sūmt- 'to pierce, bore' (M a c K e n z i e 1971, 78), Pashto sūrāi < *subra-ka- 'hole' (M o r g e n s t i e r n e 1927, 70). The IE. etymology is unclear (but cf. below).
the IE. family 'Reihenfolge, Wechsel'. In reality, there is hardly any evidence for the original meaning 'force, power'\(^4\). The verbal root \textit{sardh-} means 'to boast, intimidate (before the fight)' (the ptc. \textit{sardhanti-} often refers to an impudent enemy). To this root there are a few nominal derivatives, viz. \textit{śṛdhāyā-} (RV 2.2.10) 'arrogance', \textit{śārdhyā-} (RV 1.119.5) 'rivalling', \textit{bāhūśārdhin-} (RV 10.103.3) 'boasting of his arms'\(^5\), \textit{prasārdha} voc. (RV 8.4.1), referring to Indra, rather means 'boasting, audacious' (PW translates s.v. \textit{śardh-} 'keck, trotzig') and not 'gewaltig, sehr stark'.

On the other hand, \textit{sārdha-} m. and \textit{sārdhas-} n. mean 'host, troop', often 'a host of Maruts'\(^6\). The hapax \textit{sārdhastara-} (RV 1.122.10) is a -\textit{tara}-derivative from the substantive \textit{sārdhas-} of the type \textit{virdātara-, vṛtrātara-}, etc. (cf. AiGr. II, 2, 601 ff.), and must mean something like 'more similar to a host (of Maruts)''\(^7\).

It follows that \textit{sārdh-} never means 'to be strong', but rather has two, synchronically probably unrelated meanings: 'to boast' in the verbal root, 'troop, host' in \textit{sārdha(s)-}. We find in Avestan two similar meanings: \textit{sardōdānā} acc. pl. (Y 43.14) 'opponents, despisers' (Hum b a c h 1991, 114 'challenge') and \textit{sardēōita-}, possibly 'challenging', belong to the semantic sphere of Skt. \textit{sārdh-,} whereas LAv. \textit{sardōda- 'sort, kind} is comparable to \textit{sārdha-} 'troop'. Bal. \textit{sr} < *\textit{sard-}, Pashto \textit{sara} < *\textit{sarda-ka-} 'man' do not testify to the original meaning 'strength, power', but may have developed from 'a man of (our) kind, sort'.

The question is whether these two meanings are compatible. T o p o r o v (1980, 315 ff.) extensively analysed the semantics of this word family and concluded that the original meaning of the IE. root was 'to be divided into (equal) parts' (for 'to boast' he offered a semantic parallel in German \textit{vermessen - Vermessenheit}; another possible parallel is Russ. \textit{rjad} 'row, rank' - \textit{otrijad} 'detached force' - \textit{rijadit'sja} 'to dress, disguise oneself'). Furthermore, he convincingly argued that *\textit{(s)kerd-} is an enlargement of *\textit{(s)ker-} to 'cut'. As to Skt. \textit{s} vs. PIE *\textit{s} (\textit{s}k)-, see below (T o p o r o v only signals the phonetic problem on p. 323).

\textit{Śūdh-} 'to make clean, purify', \textit{Śubh-} 'to adorn, beautify'. These two roots are different enlargements of the PIE. root *\textit{cau-} (cf. also Arm. *\textit{c}u-).

\footnotetext[4]{It must be stressed that the semantic development 'force, power' \textit{à'} 'to show force' \textit{à'} 'to boast', advocated by \textit{Mayrhofer} (KEWA III, 309 f., EW A I I a II, 620), is far from evident.}

\footnotetext[5]{The meaning 'armstark' is very improbable (cf. PW s.v., \textit{G e l d n e r ad loc.}, AiGr. II, 2, 346).}

\footnotetext[6]{The translation 'Stärke', used by \textit{G e l d n e r for sārdha-} in 2.1.5 and 8.93.16, and for \textit{sārdhas-} in 6.68.8, is unnecessary (cf. R e n o u EVP, X, 59; XII, 41).}

\footnotetext[7]{At any rate, this comparative can hardly mean 'stärker', given by \textit{G e l d n e r and adopted by M a y r h o f e r}.}

4. We may now address the problem of the initial consonant in \textit{sārdh-} and some other roots where the comparative evidence points to *\textit{(s)ke}-. I assume the following chain of events (taking \textit{sārdh-} as an example):

*\textit{skerd-} \textit{à} *\textit{sērd-} (palatalization) \textit{à} *\textit{sērdh-} (assimilation of the initial cluster) \textit{à} *\textit{e} \textit{ardh-} \textit{à} *\textit{ardh-} (Grasmann's Law) \textit{à} \textit{sārdh-}. Since I hope to discuss the fate of PIE. *\textit{s}k in detail elsewhere, I only give short comments on the five steps involved in this development.

1) *\textit{skerd-} \textit{à} *\textit{sērdh-}. In my opinion, there was no opposition between *\textit{sk} and *\textit{sē} in PIE., the only attested variant being *\textit{sk} (cf. Z u b a t ý 1892, M e i l l e t 1894). PIE. *\textit{s}k in the position before *\textit{e}, was palatalized in Indo-Iranian to *\textit{sē} and under normal conditions eventually yielded Skt. \textit{ch}.

2) *\textit{sērdh-} \textit{à} *\textit{sērdh-}: Cf. a comparable development in Slavic, where *\textit{ke} \textit{à} *\textit{če}, but *\textit{ske} \textit{à} *\textit{sče} \textit{à} *\textit{šče} (OCS. \textit{če}, Scr. (dial.) \textit{če}, Czech \textit{ščé} (cf. V a i l l a n t 1950, 48 f.). We have to assume this assimilation of the initial cluster because Skt. \textit{ċ}- often reflects the original cluster *\textit{s}-, cf. dūchānā- f. 'misfortune' \textit{à} *\textit{dus-čuna-} (\textit{šūnām adv.} 'happily', \textit{šunā-} 'success, fortune' \textit{à} *\textit{čuna-}). Moreover, initial \textit{s} becomes \textit{č}- after final \textit{n} in the majority of Vedic texts, but, as O l d e n b e r g (1888, 426 f.) and L e u m a n n (1942, 16) have indicated, this reflex is phonetically regular only when \textit{n} goes back to original *\textit{ns} or *\textit{nt}. The sound change *\textit{č}, *\textit{sč} \textit{à} \textit{ch} shows that \textit{ch} originally was *\textit{čh}, i.e. the aspirated counterpart of \textit{s} (*\textit{č}).

It should further be borne in mind that the disintegration of the Proto-Indo-Iranian series *\textit{čh} \textit{fj} \textit{ḥ} (< PIE. *\textit{ķ} \textit{sk} \textit{i} \textit{e} \textit{g} \textit{g} \textit{ḥ}), which eventually

\textit{surb} 'pure, hole', a borrowing from Iran. *\textit{subra-}, Skt. \textit{śuc-} : Av. \textit{śuk-} 'to shine', and, less probably, Skt. \textit{śona-} 'red, crimson'). No certain cognates of this root have been found outside IIr. It seems plausible, however, to connect the PIE. root *\textit{(s)keu} (H\textsubscript{1}) - 'to observe' (Gr. \textit{kōia} 'to notice', OHG. \textit{skouwōn} 'to look at', Skt. \textit{ākti-} f. 'intention'). It is well known that verbs for 'to look, observe' can also mean 'to look (or be) beautiful, shine', cf. PIE. *\textit{leuk-} 'to see, look' (e.g. Gr. \textit{λευκός}) and 'to shine' (e.g. Skt. \textit{rōcāte}). The root *\textit{(s)keu} (H\textsubscript{1}) - is found in the meaning 'to look beautiful' in Goth. \textit{skuans}, OHG. \textit{scōni} 'beautiful'.

It is clear from this list that apparent Vedic roots of the structure \textit{TERD\textsuperscript{h}} generally reflect PIE. roots with \textit{s}-mobile. The only exception is \textit{\textit{ksu\textsubscript{h}-} to tremble'. As the PIE. origin of this root is uncertain, it seems premature to conclude that \textit{TsERD\textsuperscript{h}} roots were allowed in PIE., although \textit{\textit{ksudh-} f. 'hunger', Av. \textit{\textit{śud-} 'id.' may also point in this direction (note, however, that this root noun may be an Indo-Iranian formation in \textit{-udh-}, cf. Skt. \textit{īṣudh-}, Av. \textit{īṣud-}).
yielded Skt. ś, ch, j, h, is a relatively recent phenomenon in Sanskrit, posterior to Grassmann’s Law, as follows from the reduplicated formations like ja-hā-<*j′a-jhā-, etc. (otherwise h would have never become j through the loss of aspiration). On the other hand, in the Proto-Indo-Iranian series *č j f h (< palatalized PIE. *k(h) g(m) g(wkh)), the voiceless aspirata was lacking, which explains why *čh has become *čh (= ch), thus filling the gap.

3) *scardh- > cdardh- See sub 2). For the development of an aspirata from an original cluster with ś, cf. further the Vedic root khyā- ‘to look’ < *kçā- as follows from *ksā- attested in the Mātrāyanī Saṃhitā and Ax. xsā-.

4) *cdardh- > cdardh-. Our handbooks (cf. AiGr. I: 124) normally tell us that when ch- loses its aspiration due to Grassmann’s Law it becomes c-, but the roots with initial c- and an aspirate are conspicuously absent in Sanskrit, and, moreover, the alleged development ch- > c- (c-) is based on wrong evidence. The only argument in favour of this sound change is the perfect reduplication ca-jei- of roots beginning with ch- (cachanda, ciccheda), but, in fact, the Sanskrit roots with initial st- (where T = any stop) reduplicate only the stop (cf. tastāmbhā, caskanda, etc.). On the other hand, Iranian roots of this shape only reduplicate the s, cf. (vi-)sastarö to stā-, (auua-)hisūbiiit <*si-skid- to stād-, etc. (cf. Kellens 1984, 406). In other words, the reduplicated formations *sTeji/*sT... lost the initial s in Sanskrit and the T of the reduplication in Iranian. Consequently, the reduplicating syllable of cachanda reflects ēa- <*śca-< *ske- and thus provides no information on the development of ch before an aspirate. I conclude that there is nothing against the assumption that when ch- loses its aspiration due to Grassmann’s Law it becomes ś-.

5) *scardh- > scardh-. The final stage shows uncontroversial spirantization of the original palato-alveolar affricate, abundantly attested in Sanskrit (PIE. *k > PIIR. *č > Skt. ś). The proposed development accounts directly for the initial ś- of śardhā- <*skerdh- and for the verbal roots śudh- and subh- <*skeuab- <*skeubh-. (with generalization of the palatalized variant of the initial as, for instance, in ācar-). We must then assume that the initial ś- of śudh- and subh- later spread to śuc-, the phonologically regular reflex of which would have been *chuc-. A comparable solution can be surmised for śvābha-m. ‘gap, hole’, Ir. *śub-, if we connect this root with PIE. *skeubh- ‘to push, tear’ (Goth. afskulban ‘to reject’, OHG. seioban ‘to shove’, etc., cf. Lubotsky 1988, 92), although the Schwebeablaut in the Sanskrit word remains unexplained.

References

Böhltingk O., Roth R. [PW], 1855–1875, Sanskrit–Wörterbuch, 7 T., St. Petersburg.
Dal V., 1880, Tolkojvsi slovar’ šivag velkorusskago jazyka, Petersburg, Moscow.

Franck N., Wijk N. van, 1949, Franck’s etymologisch woordenboek der Nederlandsche taal, tweede druk door Dr. N. van Wijk, supplement door Dr. C. B. van Haeringen. ‘s-Gravenhage.
Meillet A., 1894, De quelques difficultés de la théorie générale des gutturales indo-européennes, MSL 8, 277–304.
Meillet A., 1912, À propos de avestique zrzdab-, MSL 18, 60–64.
Pokorny J. [HEW], 1959, Indogermanisches etymologisches Wörterbuch, Bern, München.
Sharman A., 1959, Beiträge zur vedischen Lexikographie: neue Wörter in M. Bloomfield Vedic Concordance (PHMA 5/6), München.
Zubaty J., 1892, Die altindische tenuis aspirata palatalis, KZ 31, 9–22.