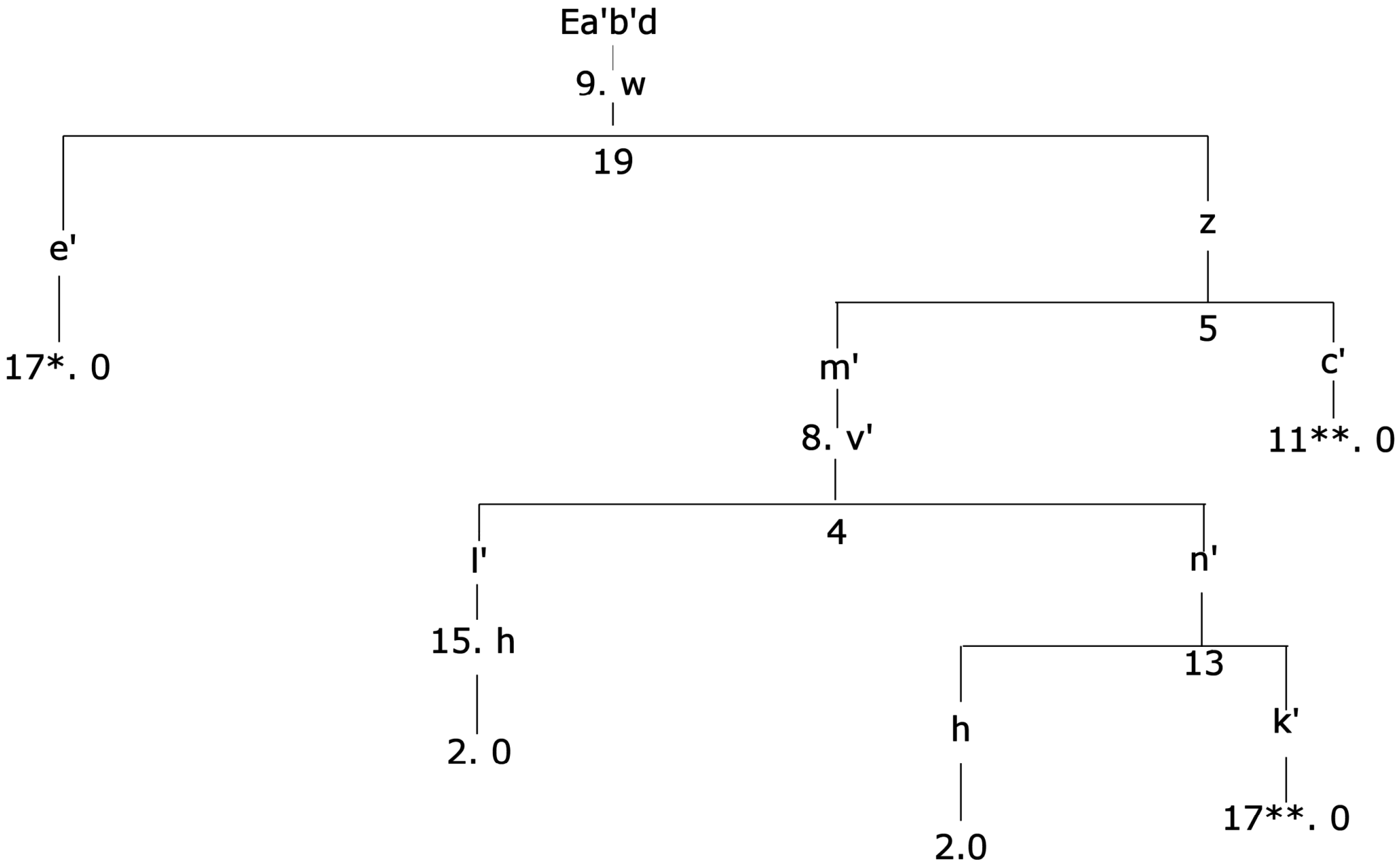

Tree for Lewis Carroll's Froggy Sorites

Produced by Graham Hawker 31 March 2010

As Carroll makes clear, we should now *verify* this Tree. As he says, "there is no logical necessity to do anything more: still it is very *satisfactory* to "verify" the Tree, by translating it into Sorites-form" [Bartley, Bk XII, ChIII, second example, Tree 2]

Following his detailed instructions we proceed as follows:

Our first sorites is the left-hand branch headed **l'** and consisting of premises 15 and 2. We will label this new sorites 21 and it will be:

m'hd † v'a'h'l' which is to say **m'dv'a'l'$_0$ (21)**

The right-hand branch is 17**. 13. 2 which is:

dk' † kh'n' † m´hd which is to say **dn'm'$_0$ (22)**

We combine these, crossing the bridge 4 and moving up the stem via 8 to give 22. 4. 21. 8

dn'm' † lnv' † m'dv'a'l' † zvm' which gives **dm'a'z$_0$ (23)**

All that remains now is to follow the tree from 11**, crossing the bridge at 5 to collect 23, taking the whole thing across the bridge 19 to collect 17* and finally move up to 9, giving us:

Ec' † zmc † dm'a'z † wez' † de' † Ew' which gives **Eda'$_0$**

We see that this is in fact larger conclusion than Ea'b'd$_0$ since it shows that Ea'bd is also a nullity.

This is similar to the comments made by Carroll in his letter to Louisa Dodgson regarding the Members of Parliament problem [Bartley, Bk XIII Ch VI]. Interestingly Carroll states in that letter *"you've fallen into the trap that I was hoping Professor Cook Wilson will fall into"* which is interesting given that Carroll's diary entry for September 5, 1896 says, "*Finished, after about two days' work, my Sorites-Problem abt. "Froggy" which contains a beautiful 'trap'*"

I am left with two doubts about the correctness of this solution to the Froggy problem.

The first is that it is perhaps not what I would have expected of Carroll. The old English song for children, "A Frog He Would A-wooing Go", has in its first verse:

A frog he would a-wooing go,
Whether his mother would let him or no.

and one might have expected that Carroll would have produced this as a conclusion. However, he may have felt that this was not a particularly good lesson for children and therefore aimed for a different conclusion.

The second doubt arises from a program I have written to produce solutions to all of Carroll's sorites problems by evaluating all possibilities. According to that program all of the following are nullities:
d'Ea'b', **d'Ea'b**, **dEa'b'**, **dEa'b**, **dEab'**, **dEab**.
This leaves **Eabd'** and **Eab'd'** as the only valid combination of retinends - Froggy's hair is out of curl and he does not have his mother's permission to go a-wooing but we cannot determine, from the information given, whether he intends to go a-wooing or not. That sounds to me rather more like Lewis Carroll.