**Electronic Supplementary Material (ESM) for:**

A wood-warbler produced through both interspecific and intergeneric hybridization

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**Text S1:** Details on determining the paternal/maternal variants in the hybrid.

For each SNP, we identified the paternal and maternal allelic variants at each of the six plumage-associated SNPs that differ between golden-winged and blue-winged warblers. For example, at a given SNP, if golden-winged warblers are consistently homozygous for “A”, while blue-winged warblers are homozygous for “C”, and both chestnut-sided warblers are genotyped as “A” homozygotes then, if the hybrid is heterozygous (“A/C”), we could infer it received the “A” allele from its chestnut-sided warbler parent, and must have received the “C” allele from its *Vermivora* parent. We then counted the number of blue-winged and golden-winged variants to estimate a genetic index across these six loci for the hybrid’s maternal parent. We compared this genetic index value to those values across different *Vermivora* phenotypes from birds genotyped across the range of the taxa (published previously in [8]): golden-winged warblers (*n* = 149), blue-winged warblers (*n* = 85), and Brewster’s warblers (*n* = 22).

**Text S2:** Additional details on the genetic index of the maternal parent.

If the female from 2017 is the intergeneric hybrid’s maternal parent, we can also infer slightly more blue-winged ancestry than suggested by our genotyping alone. This is because one of the SNPs we genotyped, on warbler scaffold 299, is directly upstream of the *agouti signaling protein* gene, and this SNP is perfectly correlated with plain versus black throat color in these warblers. The black throat of the golden-winged warbler is inherited as a Mendelian recessive character. Given that the 2018 hybrid obtained one copy of the golden-winged ASIP variant from its maternal parent (Table 1), if the maternal parent had a white throat (as the 2017 female did), it would then be predicted to have at least one copy of the blue-winged variant (i.e. a genetic index of the mother = 3/7 or 0.43). Without having a genetic sample of the maternal parent, however, it is impossible to definitively predict its phenotype.

**/Users/toews/Dropbox/CSWA_GWWA_Hybrid/supplement_songs_V1.pdf**

**Figure S1.** The songs of the putative hybrid warbler (A) andpresumed parental species, obtained from the Macaulay Library (<https://macaulaylibrary.org/)>. The song notes of the hybrid are similar in quality, length, and structure as observed in chestnut-sided warblers (B). These contrast strongly with the “buzzy” songs of blue-winged and golden-winged warblers (C and D).