The following squares are, in my view, the approximate equal, or superior of, the square published as My First Ten-Square (Word Ways August 2002). I invite readers to form their own views as to the relative merits of the three squares below and the August one. I give my own views inverted at the end of the article.

Notice that, for the first time, we have non-tautonymic ten-squares with no phrases, and one with all words solid. They are a mere whisker or two from the perfect ten-square, which I know I cannot find without using proper nouns, given a mere two million dictionary words of all lengths. These squares need a much larger vocabulary, perforce incorporating proper nouns.

DES C E N D A N T OED
ECH E N E I D A E Echeneidae, Webster 2 (genus)
S H O R T C O A T S shortcoats, see OED short-coat, 1649 quote
C E R B E R U L U S ITIS animal: Camponotus cerberulus venturensis
E N T E R O M E R E enteromere, see Webster 2 entero-
N E C R O L A T E R necrolater, Chambers, see necro-
D I O U M A B A N A Dioumabana, Guinea, 11° 16' N, 9° 08' W, NIMA
A D A L E T A B A T Adaletabat, Turkey, 38° 58 N, 42° 42' W, NIMA
N A T U R E N A M E nature-name, see OED nature V.15.
T E S S E R A T E D tesserated, see OED tesseract

DES SEM BLED see below
E L T A M A R A N I Wadi el-Tamarani, Egypt, 29° 52' N, 34° 32' E, NIMA
S T I T C H I N G S stitching, OED verbal noun, or plural in 3 quotes
S A T I R E T T E S satirette, OED, plural in quote
E M C R I S T E N E OED wosith, first quote (and 6 others elsewhere)
M A H E S W A R D I Nagar Maheswardi, Bangladesh, 24° 04' N, 90° 42' E, NIMA
B R I T T A I N E S Britains or British, see OED symbolize, 1590 quote etc.
L A N T E R N A R O Lanternaro, OED lantern 8, 1598 quote
E N G E N D E R E R engenderer, OED
D I S S E I S O R S disseisor, OED, plural in various quotes elsewhere.

The English word DISSEMBLE and its derivatives come from the Old French verb DESSEMBLER. There is one instance where the original spelling occurs in English, that of DESSEMBLINGE, in a 1621 quote under both crocodile and viperous in the OED. The implied English verb is DESSEMBLE and its past participle DISSEMBLED.
An alternative square uses emcrystene (OED unkind, 1250 quote).

DISSAVAGED  dissavage, verb, OED
IKHATARENEMOROCCO  Ikhatarene, Morocco, 33° 17' N, 4° 44' W, NIMA
SHORTLINGS  shortlings, OED morling, 1833 quote
SARARESTII  Sararestii, Romania, 44° 56' N, 24° 52' E, NIMA
ATTRISTING  attristing, OED attrist, verb
VALESTOLEN  Valestolen, Norway, 60° 49' N, 5° 32' E, NIMA
ARISTOTILL  aristotill, OED advertise, 1477 quote
GENTILITEE  OED gentility, 1546 quote
ENGINELESS  engineless, Webster 2
DESIGNLESS  designless, OED

Only one location or source is given for a name.
NIMA = National Imagery and Mapping Agency's database
ITIS = Integrated Taxonomic Information System, US Department of Agriculture

The squares were found on various machines of mine with either my program or one helpfully given by Chris Long.

DISSAVAGED  means ignoring a number of other fail. is
DESEMBLED  I am aware that hyphenophones will dissemble DESCENDANT, but I choose
ABAPTISTUM  ABAKISTUM and DISSAVAGED together, followed by
DESCENDANT  deduc marks for the other hyphenables mentioned, so my order of preference is:

I pay little attention to hyphens, as dictionaries often differ, and I feel their existence is rather
DISSAVAGED 3 place name, and 3 words appearing only in citations.
DESEMBLED: 2 place name, 2 proper nouns, 2 words from citations (not headwords), and
DESCENDANT: 2 place name, and a hyphenated word.

The deficiencies of the squares are as follows:

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