D. C. HARROWVEN,* D. D. PASCOE, D. DEMURTAS, H. O. BOURNE (SOUTHAMPTON UNIVERSITY, UK)

Total Synthesis of (–)-Colombiasin A and (–)-Elisapterosin B
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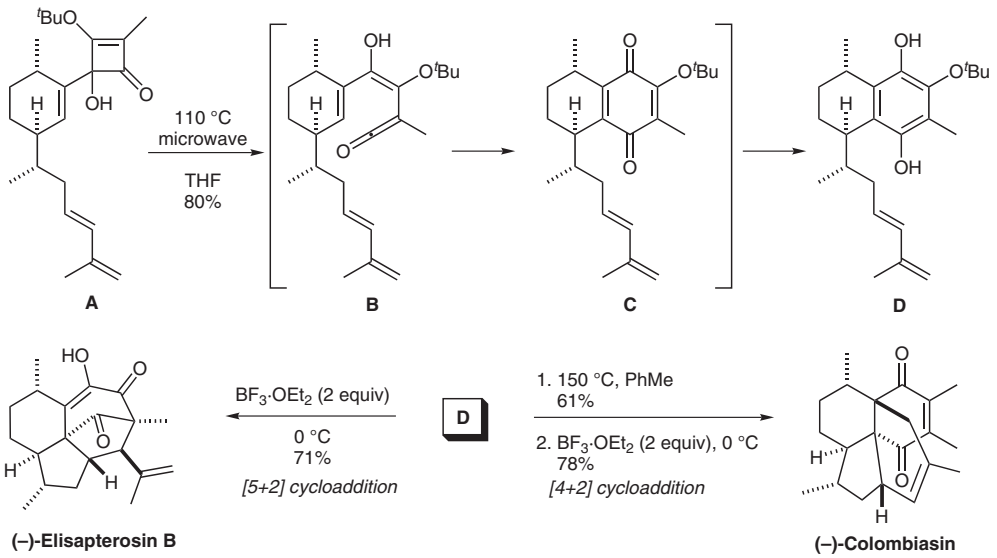

Significance: The target molecules were isolated from the gorgonian octocoral *Pseudopterogorgia elisabethae*. Elisapterosin B is active against *Plasmodium falciparum*, the parasite associated with malaria. Two of the three stereogenic centers in **D** were derived from (–)-dihydrocarvone; the third was generated by hydroboration with Ipc_2BH. All remaining stereogenic centers were created by substrate-controlled processes.

Comment: A very economical synthesis of the target molecules was achieved using a sequence of pericyclic reactions. Hydroquinone **D**, generated by a Moore rearrangement of the cyclobutenone **A**, underwent a thermal [4+2] cycloaddition to give Colombiasin A and a Lewis-acid-catalyzed [5+2] cycloaddition on treatment with $BF_3{\cdot}OEt_2$ to give Elisapterosin B.

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Category
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Key Words
[4+2] cycloaddition
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