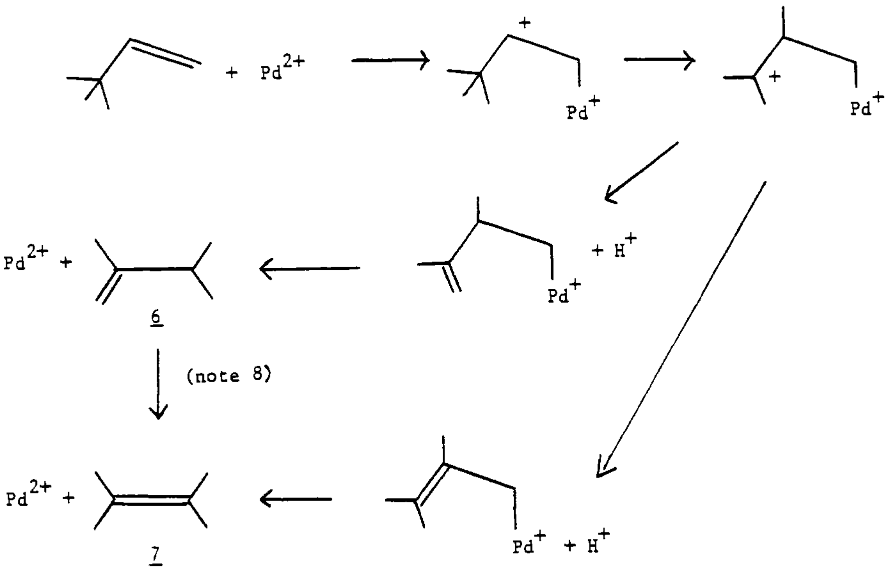
Scheme II



in Scheme I(B) should lead to the formation of significant amounts of crossover products, especially in polar solvents. On the other hand, no crossover products are expected if the catalytic isomerization proceeds through a palladium(IV) allyl hydride mechanism (Scheme I(A)). Now, it has been reported[1c] that in the **1**-catalyzed isomerization of pent-1-ene to pent-2-enes, significant amounts (>15%) of pent-2-ene-d_1 and pent-2-ene-d_3 were formed, starting with pent-1-ene-*1,2*-d_2 *even though the reaction was carried out in benzene.* Similar amounts of crossover products were also observed[1a] when a 1:1 mixture of pent-1-ene and hept-1-ene-*3,3*-d_2 was isomerized in the presence of **1** in benzene. These observations would seem to support the mechanism involving heterolytic cleavage of a C–H bond of the olefin (Scheme I(B)).[9]

In conclusion, it appears that incipient carbonium ions may be generated by the interaction of olefins with electrophilic transition-metal centers, and such species may play an important role in transition-metal-catalyzed isomerization of olefins.

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Chandlee Laboratory
Department of Chemistry
The Pennsylvania State University
University Park, Pennsylvania 16802

Ayusman Sen*
Ta-Wang Lai

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[9] We have now succeeded in isolating a cationic Pd(II) allyl compound of the type **5**, formed by the heterolytic cleavage of the allylic C–H bond of the olefin by **3**, as postulated in Scheme I(B).

Additions and Corrections

1981, Volume 20

Henry W. Choi and E. L. Muetterties*: Catalytic Carbon Monoxide Hydrogenation with $Os_3(CO)_{12}$ and Boron Tribromide.

Page 2664. In the right column, sixth line from the bottom, $Os_2(CO)_6Br$ should read $Os_2(CO)_6Br_4$.

Page 2665. In Table I, for C_2H_6, the last column entry of 0 should read 12.—Henry W. Choi