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ERRATUM TO "IDEALS AND CENTRALIZING MAPPINGS IN PRIME RINGS"

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In the proof of the Theorem we want the automorphism T to induce an automorphism on the ideal U, but this may not be the case, as pointed out by Hisao Tominaga (let R be the polynomial ring over the integers in indeterminates x_i, $i = 0, \pm 1, \pm 2, \ldots$, and let U be the ideal of R generated by $x_1, x_2, \ldots$. If T is defined by $T(x_i) = x_{i+1}$, then $T(U) \subsetneq U$).

To handle this case, let

$$K = \cdots + T^{-2}(U) + T^{-1}(U) + U + T(U) + T^2(U) + \cdots.$$

K is a nonzero ideal and T induces an automorphism on K. Now we need to show that $[x, T(x)]$ is in the center Z of R for every x in K. For x in K,

$$x = T^{k(1)}(x_{k(1)}) + T^{k(2)}(x_{k(2)}) + \cdots + T^{k(n)}(x_{k(n)})$$

where each $x_{k(i)}$ is in U. Let

$$m = \text{absolute value}\left[\min\{0, k(1), k(2), \ldots, k(n)\}\right].$$

Then $T^m(x) = y$ is in U since U is invariant under T. Hence $T^m[x, T(x)] = [T^m(x), T^{m+1}(x)] = [y, T(y)]$ is in Z because T is centralizing on U. Since T is an automorphism, $[x, T(x)]$ is in Z for every x in K. Apply the result of *Centralizing automorphisms of prime rings* [Canad. Math. Bull. **19** (1976), 113–115] to K.

In the Corollary the same problem may occur and can be remedied in the automorphism case by a similar argument using the fact that the Jordan ideal is invariant under T. For derivations such that the associative ideal I is not invariant, use $K = I + D(I) + D^2(I) + \cdots$, which is a nonzero ideal contained in U and invariant under D.

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Joseph H. Mayne, *Ideals and centralizing mappings in prime rings*, Proc. Amer. Math. Soc. **86** (1982), 211–212.

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