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ERRATA FOR TWO PAPERS OF STITZINGER

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There is a mistake in each of [3] and [4]. The purpose of this note is to correct the error in [3] and to salvage what can be saved in [4]. In each case the notation will be that of the paper under discussion.

Professor Homer Bechtell has kindly informed me of an error in the proof of the Theorem of [3] which occurs in the case $MG^1 \subset G$. The theorem is true however by altering the proof at this point.

Assume that $M \subset MG^1 = M_1 \subset G$. M_1 is an invariant subgroup of G, and since $G^1 \subset \mathrm{Soc}(G)$, G^1 is a direct sum of minimal invariant subgroups of G. By Clifford's theorem (p. 70 of [1]), each minimal invariant subgroup of G is either M_1-central or M_1-hypereccentric, and hence

$$G^1 = (G^1 \cap Z(M_1)) \times [G^1, M_1].$$

Let C be a Carter subgroup of G and let $C_1 = (C \cap M_1) \times (G^1 \cap Z(M_1))$. By the corollary to Lemma 2, C_1 is a Carter subgroup of M_1, since $\mathrm{Fr}(M_1) = 1$. But C and G^1 are elementary abelian, hence C_1 is also. By the minimality of G, M_1 is elementary, hence $\mathrm{Fr}(M) = 1$.

In [4], the claim in Lemma 3 that M is a subgroup is not true in general. If A is elementary abelian, then M is a subgroup, hence the theorem holds in that case. The theorem also holds for the following conditions on $\mathfrak{X}$. Let $\mathfrak{X}$ be the class of nilpotent groups N with the following properties:

(1) $Z_1(N)$ is a cyclic p-group.

(2) There exists an elementary abelian characteristic subgroup A of N such that $A \nsubseteq Z_1(N)$ and $A \subseteq Z_2(N)$.

Here we let $K = A \cap Z_1(N)$ and evidently $|K| = p$. Now the proofs in the paper may be used with K replacing $Z_1(N)$. Note that the existence of A is equivalent to the existence of a noncyclic characteristic elementary abelian subgroup. Now the p-groups which do not have such a subgroup are given in Satz 13.10, Kapitel III of [2].

References

1. D. Gorenstein, *Finite groups*, Harper and Row, New York, 1968. MR **38** #229.

2. B. Huppert, *Endliche Gruppen*. I, Die Grundlehren der math. Wissenschaften, Band 134, Springer-Verlag, Berlin and New York, 1967. MR **37** #302.

3. E. Stitzinger, *On elementary groups*, Proc. Amer. Math. Soc. **26** (1970), 236–238. MR **42** #376.

4. ———, *A nonembedding theorem for finite groups*, Proc. Amer. Math. Soc. **25** (1970), 124–126. MR **41** #3581.

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