

ERRATUM TO "REMARKS ON CLASSICAL INVARIANT THEORY"

ROGER HOWE

Although this paper circulated as a preprint for 12 years, an error in the argument for the Capelli identity went unnoticed until Professor M. Wakayama read the paper in order to review it. I thank him for his care and for bringing this error to my attention.

The error occurs on page 566. The result at issue, that $\det \Pi$ is central in $\mathcal{U}(\mathfrak{gl}_m)$, is true (and classical) and the general line of argument is sufficient to prove it, but the details of the computation are described incorrectly. The identity on line 3, page 566 is correct, but the description of the calculation drawn from it is not. Instead of terms of the form

$$\begin{bmatrix} \pi'_{ij} & \pi'_{ij} \\ \pi'_{ik} & \pi'_{ik} \end{bmatrix} + \begin{bmatrix} \pi'_{(i+1)j} & \pi'_{(i+1)j} \\ \pi'_{(i+1)k} & \pi'_{(i+1)k} \end{bmatrix}$$

we must deal with terms of the form

$$\begin{bmatrix} \pi'_{ij} & \pi'_{ij} \\ \pi'_{(i+1)k} & \pi'_{(i+1)k} \end{bmatrix} + \begin{bmatrix} \pi'_{(i+1)j} & \pi'_{(i+1)j} \\ \pi'_{ik} & \pi'_{ik} \end{bmatrix}.$$

This leads to a contribution of two terms, similar to the ones described in lines 14–17, but with the 1's on the diagonal, and with an appropriate sign. One then checks these terms cancel terms arising from the addition of $m - k$ to the k th diagonal element, $k = i, i + 1$.

Alternatively, one can perform the computation, indicated in the last paragraph for $\pi'_{(n-1)n}$, for $\pi'_{i(i\pm 1)}$, $1 \leq i, i \pm 1 \leq n$. This will also establish the centrality of $\det \Pi$.

Roger Howe, *Remarks on classical invariant theory*, Trans. Amer. Math. Soc. **313** (1989), 539–570.

DEPARTMENT OF MATHEMATICS, YALE UNIVERSITY, YALE STATION, NEW HAVEN, CONNECTICUT 06520