

Correction to "The Image of J in the EHP Sequence"

Author(s): Mark Mahowald

Source: *Annals of Mathematics*, Second Series, Vol. 120, No. 2 (Sep., 1984), pp. 399-400

Published by: Annals of Mathematics

Stable URL: <http://www.jstor.org/stable/2006947>

Accessed: 16-08-2016 13:33 UTC

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://about.jstor.org/terms>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Annals of Mathematics is collaborating with JSTOR to digitize, preserve and extend access to *Annals of Mathematics*

Correction to “The image of J in the EHP sequence”
116 (1982), 65–112

By MARK MAHOWALD

There are several misprints and one error which make the latter part of my paper [M1] very difficult to read. It is my intention here to list them with the corrections. In addition there was an error in my paper [M2]. This affects the statements of Theorems 2.5c and 2.6c which were results proved in [M2]. This is discussed in the correction to that paper.

In Theorem 7.7 on page 96 every occurrence of $|j|_2$ should be replaced by $|2j|_2$. This gives a theorem which is in fact proved by the argument which follows. The corrected theorem is:

THEOREM 7.7. *In the spectral sequence $\{E_r(\mathcal{X}(P))\}$, the class 1_{4j-1} in $E^{0,4j-1}$ is a cycle in $E_{|2j|_2}$ and $\delta_{|2j|_2} 1_{4j-1} \neq 0$ if $E_1^{[2j]_2, 4j-2+|2j|_2} \neq 0$. This formula implies all the differentials.*

A similar error occurs in the statement of Theorem 7.9 and so we just state the corrected theorem.

THEOREM 7.9. *Each class a in $E_1^{s,t}(\mathcal{X}(P^{2n}))$ for $t-s=4j-1$ projects to a cycle in $E_{|2j|_2}$ and $\delta_{|2j|_2} a \neq 0$ if $E_{|2j|_2}^{s+[2j]_2, t+[2j]_2+4j-2} \neq 0$. This formula implies all the differentials.*

In the tables which follow there are several misprints also. In particular, in the last two lines on page 98, “ $j=8k+i$ ” should read “ $j=8k-i$ ”. In the second line on page 99, the group $\mathbb{Z}/2^{[4n]_2}$ should be $\mathbb{Z}/2^{[4(n+1)]_2}$.

An error of a more serious nature occurs in the proof of Theorem 7.11. On page 101, a homotopy class β is produced which is stable and, as a stable class, has Adams filtration ≥ 4 . It is not clear why, as an unstable class with the properties given in the proof on that page, this filtration should be preserved. A correct proof of Theorem 7.11 has been found and is given in [BJM]. The error was also observed by Davis [D].

Finally the statement of Theorem 8.4 was completely garbled. The correct theorem is:

THEOREM 8.4. *If $j \geq 15$ then the origin of the generator of the image of the J homomorphism in the j -stem is: 3 if $j \equiv 0(8)$, 2 if $j \equiv 1(8)$, and 5 if $j \equiv 3(8)$. If $j = 8k - 1$ and $j \geq 15$ then the element in the image of J of order 2^a in the j -stem has sphere of origin given by:*

$$\begin{aligned} \text{sphere of origin} &= 5 + 8b \text{ for } a = 1 + 4b \\ &= 6 + 8b &= 2 + 4b \\ &= 7 + 8b &= 3 + 4b \\ &= 1 + 8b &= 4b. \end{aligned}$$

There are several other misprints which do not seem to make the paper unreadable.

NORTHWESTERN UNIVERSITY, EVANSTON, ILLINOIS

REFERENCES

- [BJM] M. G. BARRATT, J. D. S. JONES and M. E. MAHOWALD, The Hopf invariant and the Kervaire invariant, to appear.
- [D] D. S. DAVIS, Review of ref. [M1], Math Reviews, 83i (1983), 3785.
- [M1] M. E. MAHOWALD, The image of J in the EHP sequence, Ann. of Math. 116 (1982), 65–112.
- [M2] ———, bo resolutions, Pac. J. of Math. 92 (1981), 365–383. Correction, 111 (1984), 117–123.

(Received January 8, 1984)