Total carotenoids in Antarctic Krill from the Indian Ocean Sector of the Antarctic Ocean.Sexual and Spatial differences.

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During Antarctic summer, samples of *Euphausia superba* and *Thysanoessa macruca* were utilised to study their morphology and carotenoids. For *E. superba*, males II, a morphologically different males group, showed the highest carotenoid content, as compared to other maturity and morphologically different groups (juveniles, males I, males II and females). The two male groups also had a significantly different lipid contents, being lower in the males II group. No significant difference was obtained between the groups, because of the great variability on the data.

Significant regressions were obtained between, eye diameter and carotenoids per animal, and wet weight and carotenoids content. On a per station basis, the variability of the size composition of each sample determined the great variability of the data obtained. We hypothesized that animals with higher carotenoids content, which also have greater abdominal length (males II), would also be better swimmers, they are more active, and are utilizing their carotenoids as a protection pigment; their higher carotenoid content is reflecting greater activity, since they would be in search of females for fecundation, during summer.

For *T. macrura*, few samples were analysed, showing very high values, especially females with great lipid content (up to 60% on dry weight), as compared to juveniles, with lower lipid content. On a per gram of wet weight basis, carotenoids are about 4 times greater in *T. macrura* than in *E. superba*. This is probably reflecting a different diet in *T. macrura*, relying more on other zooplankton for food in adult animals.