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Correlations between haemolymph ecdysteroids titer, multiplication of hypodermal cells and deposition of cuticle during the last larval instar of the tick *Ornithodoros moubata*

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In order to grow, ticks like other arthropods have to molt between successive instars. The molting process involves a series of modifications of the hypodermis (outermost cell layer secreting the cuticle), which lead to the typical renewal of the cuticle. One of the first cytological event of the molting process is the increase of the hypodermis surface by cellular division. It is followed by the detachment of the hypodermis from the old cuticle (apolysis) and the synthesis of new cuticle. At the moment of ecdysis, shedding of the old cuticle and stretching of the new soft cuticle allow an increase of volume. Those cellular events can be correlated to the ecdysteroids titer in the haemolymph. Detected by radioimmunoassay a small peak of ecdysteroids is associated with the mitotic event of the hypodermis and a larger peak with apolysis and the beginning of cuticle deposition. Preliminary results show that the ecdysteroid is mainly 20-hydroxyecdysone. The processes of molting in ticks and in insects are then very similar.