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Adaptation, from molecules to communities

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ASYMMETRY OF LEG BRISTLES IN THE SPIDER MITE *TETRANYCHUS URTICAE*.

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In mites, variations in the form of unilateral or bilateral absences of leg bristles are common and result in asymmetrical individuals. Genetic and evolutionary aspects of these discrete variations are still poorly understood. The French acaralogist Grandjean interpreted these numerical variations as the mechanism leading to the reduction of bristle number (regression) that occur during the evolution of many mite species. Asymmetry, more precisely fluctuating asymmetry (by contrast to directional asymmetry and antisymmetry), can also be used as a measure of developmental stability. Our study aims to test the genetic basis of Grandjean hypothesis and to test the effect of genetical (e.g. inbreeding) and environmental (e.g. pesticides) stress on developmental stability. The two-spotted spider mite (*Tetranychus urticae*) was chosen as a model because of its short generation time and its haplo-diploid genetic system. Preliminary results indicate that fluctuating asymmetry occurs, at various developmental stages (larva, nymph 1 & 2, adult), in many *T. urticae* leg bristles. Depending of the bristle, a variation is, or is not, kept from one ontogenetic stage to the following. Most bristles vary in less of 5% of the adults except 13 which vary at frequencies up to 58%. Males are more asymmetrical than females, possibly in relation with their haploidy.