Phylogeny and classification of Coccinellidae

No doubt because of their common occurrence in Europe and their distinctiveness, ladybirds were known to the earliest entomologists. Linnaeus (1758) established the genus *Coccinella* and described 36 species that currently are assigned to several genera and some to different beetle families. Obviously for C. Linnaeus the overall rounded shape, spotted elytra and short, clubbed antennae were the distinguishing characteristics of the genus.

Since Linnaeus' time, many new species have been described by many authors. However, it was about 100 years before two major works by the French entomologist, Etienne Mulsant (1846, 1850), set the foundations for the modern classification of Coccinellidae. Mulsant's publications included first ever supra-generic categories (Tribes) in Coccinellidae, keys to genera and descriptions of all (then) known world species. Whilst recognising many obvious errors or misinterpretations by Mulsant, we can but appreciate the ingenuity of Mulsant in recognising several natural groups and discovering important morphological characters in spite of limited optical equipment at his disposal.

Mulsant's monograph was revised and improved by George Crotch, who acquired most of the collections originally studied by Mulsant. Crotch (1874) provided, in his posthumously published book, a critical catalogue of the world taxa and proposed a slightly altered classification that departed from the division of Coccinellidae into the hairy 'Trichoisomides' and glabrous 'Gymnosomides' of Mulsant, and classified setose Epilachnides as a subgroup of the subfamily Coccinellidae. Crotch also described numerous new genera and species and synonymised many of the Mulsant taxa. In the introduction to his book he also included useful accounts of major papers on Coccinellidae published subsequent to Linnaeus (1758), listing new taxa and new synonymies.

The classical reference in the beetle classification, the 'Genera des Coléoptères' by T. Lacordaire, had very limited impact on Coccinellidae. This was because, following Lacordaire's death, the last volume in the series, the volume including Coccinellidae, was written by Chapuis (1876). Chapuis had very few original ideas and mostly followed Mulsant's publications. The one exception though, was to recognise a major division of Coccinellidae into phytophagous and aphidophagous ladybirds (after Redtenbacher 1844) instead of the hairy versus glabrous forms as recognised by Mulsant in his works.

The end of the 19th and the beginning of the 20th centuries saw numerous publications of two major workers, the German Julius Weise and the Frenchman A. Sicard in addition to single but important publications about Central European species by Ludwig Ganglbauer (1899) and North American fauna by Thomas Casey (1899). Casey proposed many generic and tribal divisions of Coccinellidae that were based on his extensive collection of the North American beetles but also on examination of many world groups. Both Weise and Sicard published papers, refining the existing classification by describing new genera and proposing tribal groups.