INTRODUCTION

Many Crustacea live in some kind of association with other living beings, either animals or plants. In some cases, such a relation would seem the result of accidental, merely occasional encounters: specimens of Volvox, chironomid larvae, and certain ostracodes that are sometimes found in the brood pouch of daphniid Branchiopoda can only be qualified as ‘strays’. For other organisms, in contrast, we can observe true relationships that are often complex and as yet only superficially known. In such cases of true association, quite exact and stringent rules prevail that determine the delicate, yet not infrequently obligate, relationship between the associates at issue.

For generations, biologists have attempted to classify those associations into categories. The criterion that was most often applied concerned the exchange, either unilateral or bilateral, between the two associates and included the effects of either profit or harm, even damage. Obviously, teleological and/or anthropomorphic reasoning can easily influence such an approach. The results, thus, were primarily speculative and vague, and the relationships recognized were grossly described as of two types that could relatively easily be determined, i.e., either involving spatial relationships (shelter, protection), or nutritional associations.

1) The original text was updated by Jean-Paul Trilles in May 2008.
In the present context, it would not be useful to repeat the discussions on subdivisions of the categories of relationships that have been proposed so often in the past. Many can be found in the various treatises on zoology as well as in introductory texts on parasitism and ecology. Nonetheless, in this regard the following works should be mentioned: Caullery (1922), Grassé (1935), Baer (1952), Dales (1957), Gooding (1957), Hopkins (1957), Yonge (1957), Cheng (1973), Fricke (1975), Patton (1976), and Boucher et al. (1982), which in fact constitute the historical backbone of parasitology. However, in 1976, Monod approached the question of a classification of the various kinds of relationships anew in a detailed and critical manner. He ultimately concluded that the rich diversity of actually observed associations ought to be recognized as including five categories that together encompass symbiosis between “consortes”, i.e., associates. This grouping included the following classes:

- **epibiosis**: a relationship in which an epibiont settles and lives on a host, the basibiont; the organism thus using the host as a substrate, can be either an epizoont or an epiphyte; the phenomenon known as phoresy, in which transportation of the epibiont by the basibiont seems to constitute a major factor, is considered only a subcategory of epibiosis;
- **inquilinism**: a simple relationship in which an organism finds shelter in the vicinity of another being, which latter organism thus in part constitutes the habitat for the one seeking shelter;
- **commensalism**: a complex bilateral relationship that is beneficial for the commensal [and not harmful for the other symbiont];
- **mutualism**: a complex bilateral relationship involving reciprocity of advantages for both symbionts;
- **parasitism**: a complex bilateral relationship that is beneficial for the parasite, but harmful for the host.

This same classification has been retained by Cassier et al. (1998), while Combes (1995) earlier introduced the concept of the ‘duration’ of relationships in order to unite the total of the above five categories with the phenomenon of parasitoidism. In this relationship, an organism (often an animal) lives either in or on the body of its single host individual and feeds on that host’s tissues only during a certain part of its development, eventually killing the host and leaving the carcass to continue its life cycle in the subsequent, free-living adult stage.

The world of associated crustaceans is so rich and varied, that it would seem quite easy to find excellent examples to fit the classification thus proposed. Yet, the precision of these categories is a mere illusion: many cases have been found that are intermediate between two (or even more) of those classes. In addition, extended knowledge of the biology and physiology of the various species often necessitates reconsidering a number of earlier adopted views. The lepadomorph cirripedes we find fixed to the exoskeleton of Scyllaridea and other Decapoda Reptantia are epibionts, but possibly also of a phoretic nature. The Copepoda Harpacticoida that live on many crabs, and copepods like Balaenophilus, encountered on the baleen plates of whales, can be characterized as commensals as some researchers point out, or simply as phoretics as well. Crabs of the family Xanthidae and