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DIGESTION OF CHITIN, CELLULOSE AND OTHER POLYSACCHARIDES BY BEETLES (COLEOPTERA). Ch. Jeuniaux* and M.F.Jaspar-Versali, Zoological Institute, Liège University, B-4020 Liège Belgium.

Using both classical biochemical methods and histoenzymological techniques, different hydrolytic activities against polysaccharides were searched for in the digestive system of several beetle species. Hitoenzymological data provided useful informations concerning the tissular origin and the localization of the hydrolases so far pointed out.

Carabid beetles are characterized by a broadly diversified digestive enzymatic equipment, with high chitinases, cellulase, amylase and laminarinase activities. Such diversified digestive abilities, which are interpreted as a primitive characteristic, allow the exploitation of diet with maximum efficiency.

In most other beetle families studied so far, the digestive enzymatic equipment appears more specialized, the secretion of some glycanases being unconspicuous and probably lost. For instance, chitinase secretion is lacking in the digestive tract of Scarabaeidae, Geotrupidae and Dermestidae, whereas cellulase (of glandular origin, at least) was not found in Scarabaeidae, Geotrupidae and Dytiscidae. However, a diversified enzymatic equipment similar to that one found in Carabidae is obvious in some other families such as Silphidae and Pyrochroïdae.