which occur within the organism are the only ones of this class. There is no more common and universally important reaction in organic chemistry, and many compounds and classes of compounds which have nothing to do with the organism undergo hydrolysis. Moreover, generally speaking, all reactions of this class are very similar in their principal characteristics, resembling one another both dynamically and statically. Spontaneously they occur not at all, or very slowly. Under the influence of enzymes, of acids, and of alkalies acting catalytically, that is to say, facilitating the process without in the end taking part in it, much as oil facilitates the action of a machine, they progress rather slowly and very smoothly. By-products are not formed; the reactions are simple, uncomplicated, and reliable. Hence they enable the organism to make all sorts of rearrangements and reconstructions of chemical substances efficiently and without loss of material.

The chief cause of such traits in hydrolysis is the fact that the energy transformation which accompanies the process is almost exactly nil. For it has been found in general that chemical reactions which liberate much energy are violent, hard to regulate, often complicated by intricate side reactions, and