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It has long been known that the presence of certain substances (promoters) in a given catalyst increases its activity. But to explain how they influence a catalyst in a given reaction presents innumerable difficulties. Unrelated facts, generally observed by accident, have trickled drop by drop into the body of this science to form the mass of data on which various people have based various explanations of this phenomenon. Most of these have been inspired by the physical changes which take place. Because the rate of chemical reaction depends on the area of the surface of the catalyst, scientists saw in the promoters a means of increasing the surface of the catalyst, and thereby either increasing the amount of active center or preventing the growth of crystals in the catalyst. No one paid much attention to the possibility of the promoters taking part with the catalyst in the rate of reaction, because it was not established that the catalyst itself could produce a definite chemical reaction with a catalyzed substance under suitable conditions (namely, such reactions as would agree with its chemical function). So, in order that one might see "chemism" in catalytic chemical reactions, and, with its help, try to understand them, it was necessary to discover a series of new reactions and their corresponding catalysts. Then by comparing the chemical properties of the catalyst and the substance on which it is to work, we can begin to understand the chemical reaction which will take place. This new knowledge will allow us soon to classify catalysts according to their catalytic actions based on their