Explaining Insect Metamorphosis at the Family Dinner

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Imagine that you have left campus to spend the weekend with your parents and celebrate your uncle's 50th birthday. Your relatives are naturally curious that you are taking a course in entomology, and while sitting at the dinner table, your 9 year old cousin demands to know how a caterpillar can possibly turn into a butterfly in only 4 or 5 days, and why doesn't a cockroach also metamorphose into a more attractive creature. Although you would prefer to dodge the question, you catch a stern look on your father's face and realize that the time has come to show your relatives what you have been learning down at college. Using carefully chosen words, explain the concepts of ametabolous, hemimetabolous and holometabolous development to those around the table. Note that although the adults don't have a background in biology, they will be impressed by your use of proper terms as long as you clearly explain what they mean. Remember also that the original question was from a precocious 9 year old, so be sure to include common terms and insect examples that you know your young cousin is familiar with. Your explanation should include an explanation of the importance of wings, some references to which form(s) of development are considered most advanced, and what sort of ecological or life history benefits might be associated with each. The final product should be a 1-3 page (double-spaced), carefully edited paper.