to learn, but much also to unlearn. Familiar objects and events are far from presenting themselves to our senses in that aspect, and with those connections, under which science requires them to be viewed, and which constitute their rational explanation."

Q. What kind of student is referred to here? A. The student who enters on a scientific pursuit.

Q. What is said of such a student? A. That he has much to learn.

Q. Is anything else said of him? A. That he has much to unlearn.

Q. The author says that every student of a science has much to learn and unlearn; but he says that this is more particularly true of a certain class of students; what class? A. Those who begin at an advanced period of life.

Q. What is meant by the word "student?" A. One who studies.

Q. And what do you mean by studying any subject? A. Reading about it, and thinking about it.

Q. The student referred to is, you have told me, the student "who enters on a scientific pursuit"—pursuit here meant subject: what is meant by a *scientific* "pursuit or subject?" A. A subject carefully arranged, so as to show its facts, causes, and reasons.*

Q. This explanation is difficult for you to understand; you will best explain it by an example. A. Astronomy, geology, etc., are "scientific subjects," or sciences; that is to say, the real facts about the stars, not merely what seem to be the facts at first sight, arranged so as to show their connections and causes, is the science of the stars, or astronomy (and so of geology).*

Q. Can any of you now, looking carefully at the sentence, shut the book and give me the substance of it in your own words? A. A person beginning to study science will find that he has much to learn as well as to unlearn, and this all the more if he is grown up before he begins.

Teacher. We shall now take the second sentence. (The teacher here reads it slowly, while the pupils follow with the eye.)

Q. What is here said about "familiar objects and events?" A. That they are far from presenting themselves, etc.

Q. What things are "far from presenting themselves," etc.? A. "Familiar objects and events."

Q. In the science of astronomy, for example, what would the "familiar objects and events" be? A. The heavenly bodies and their motions.

Q. Which are the *objects*, and which the *events?* A. The bodies are the *objects*, and their motions are the *events*.

Q. Now the author says that these objects and events are "far from presenting themselves in a certain aspect and connection:" what do you mean by "aspect?" A. Appearance.

Q. What by "connection?" A. Their union with each other, or other things, or their relation to these things.

Q. What kind of appearance and connections do they fail to present themselves to our senses in? A. The appearance and connection under which science requires them to be viewed.

Q. Does the author say anything else about that "appearance" and "connection?" A. Yes. He says that they constitute their rational explanation.

Q. *What* "constitutes" the rational explanation" of *what?* A. A certain aspect and certain connections of objects and events constitute the rational explanation of these objects and events.*

Q. Can we accurately say that an aspect or appearance and certain connections constitute an explanation of anything? A. No. What is meant

* Of course an answer of this sort is worked out by the help of the master, and must be the result of many leading questions.