interpreted in a certain manner and taught according to a certain method, becomes a social and moral science, instead of remaining a study wholly material; becomes "a human science," instead of being the knowledge of rude and gross objects; and it is only thus that it will be able, with all other sciences understood in a similar way, to obtain its legitimate place among the "humanities." The highest aim of a liberal education is to excite interest, and all that is not interesting ought not to be taught to the "humanists," except under the condition of absolute necessity; *πολυμαθία νοον οὐ διδαϐχει.*

What are the necessary sciences? There are some sciences which are truly explanatory, while there are others which are so only to a certain extent. Thus mathematics and mechanics are perfectly explanatory; their analysis and synthesis are complete and give the idea of necessity. The effects are seen in their causes, and all is clear and transparent to the mind. Physics is also in a large measure explanatory, and has theories, as that of the dew, which suggest the idea of necessity. But when we come to chemistry we leave the merely explanatory, and we cannot say how or why a certain combination of oxygen and hydrogen makes water. Even when the properties of the composing elements are known we are still unable to deduce the properties of the substances which result from the combination. We can only state the phenomenon, we can say "this is so," or that "this will be the result," and you will see oxygen and hydrogen changed into water. "In chemistry," says M. Berthelot, "our power goes further than our knowledge." The natural sciences are still less explanatory. Life remains a mystery. To state is not to explain. We may open a grain of wheat which has germinated, and we may destroy the germ, but this does not make us understand the great law of life, the secret of universal germination. Even the functions of life can be only very imperfectly explained. We cannot tell why the brain has two hemispheres, or why it is formed in such a manner, or why such a flower has five petals and not six, or why such a stratum has such a composition and not another. Here we can only state, describe, or recount. The truly scientific part of natural history is beyond the compass of secondary education; the descriptive part is either useless or belongs to primary education. Nature turns its kaleidoscope and we are content to note the