

On an objective consideration of the development of our knowledge concerning the existence of vitamins we must, in my opinion, come to the conclusion that it is impossible to speak here of a discovery made by one person and of no use to quarrel about who was the discoverer, but that we can only think here of a conviction, growing in the course of years, that there are indispensable, though still unknown elements in food—a conviction which has led to a more and more searching investigation.

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A LOGIC POEM

WHAT is logic? Are not the following examples cases of logic? The first is a poem developed out of a well-known Irish distich. (1) It goes thus:

Unless the kettle boiling be
They labor in vain who make the tea;
Unless the tea be properly made
My guest will not like it, I am afraid;
Unless my guest contented be
She'll never again come visiting me.

Consequently:

Unless the kettle boiling be
She'll never again come visiting me.

(2) Are the two following sentences logically equivalent or are they not? "Not unless it rains do I take an umbrella," "Not unless I do not take an umbrella does it not rain."

(3) A child of four, sitting at the dinner table, was making the interesting experiment of eating her soup with a fork. Her mother said to her: "Nobody eats soup with a fork, Emily," and Emily replied, "But I do, and I am somebody."

This last is an antilogism—a form of reasoning which it has been proposed to substitute for the syllogism. It is the argument of rebuttal, the conversational argument, and it doubtless arose earlier, in the development of the human race, than the argument of drawing conclusions. It is certainly fully as easy, as is proved (if proof were necessary) by its having been used, in exactly this form, by a very young child. Here is another example of it, expressed in terms of the logician's favorite *s*, *m* and *p*:

"If no priests are martyrs and there are no saints who are non-martyrs, then it-is-impossible-that any saints should be priests." Here it will be noticed that the common term of the first two premises is martyrs and non-martyrs, *i.e.*, a positive and a negative term. Common logic, however, insists upon it

that the term common to two premises must be absolutely and exactly the same; nevertheless, this argument would appear, to the untrained logician, to have a certain degree of validity; what is the trouble? Senator N. said: "*It-cannot-be-that* any of these measures are idiotic, *for* they are all necessary, and nothing that is necessary is idiotic." This is not common logic. What, then, is it? What is logic?

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QUOTATIONS

A BERTHELOT MEMORIAL

It is not as a man of a particular nationality that a monument to Berthelot, one of the pioneers of synthetic chemistry, is proposed. France has reason to be proud that she gave birthplace and domicile to this great chemist, "the undisputed head of French chemistry and perhaps the most versatile of modern chemists" (as one of our foremost chemists wrote a few years ago), as well as to Pasteur, the pioneer in another field of science; Mme. Curie in still another, Henri Poincaré, "the greatest mathematician of his age," and Henri Bergson, who has illustrated in his own achievement the claim he has made for France in the field of philosophy that she has been "the great initiator"—not to go back into certain other periods when the scepter of science was undisputedly held in her hands.

It is characteristic of the French that they hold their supreme men of science and the arts and letters in highest popular esteem. There is scarcely a town in France that does not have a street or a square bearing the name of Pasteur, while no great scientist, man of letters, artist, musician, is without his monument. When Goethe was in Paris a century ago (1827) he wrote of the sympathetic atmosphere of the place:

Only imagine a city like Paris where the cleverest heads of a great kingdom are grouped together in one spot and in daily intercourse incite and stimulate each other by mutual emulation, where all that is of most value in the kingdom of nature and art from every part of the world is daily open to inspection, and all this in a city where every bridge and square is associated with some great event of the past and where every street corner has a page of history to unfold.

The thing celebrated is not always nor even usually military achievement but intellectual power. Goethe said that such intellectual power could never be met with a second time on any single spot in the whole world. It was entirely in character that the people of Paris, when the days were almost if not quite the blackest in the war, when the city was within reach of the guns of the enemy and when there were night

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