Such a calculation may have thermodynamic significance in some cases but it would be absurd to say that a tungsten wire maintains a statistical equilibrium with an atmosphere around it of one atom per liter. The absurdity becomes more obvious when we consider that a very high vacuum contains 10^{10} molecules per liter.

Similarly any calculation from thermodynamic data that one mercury ion exists per 1,000 liters is quite meaningless. If the precipitated mercuric sulfide is in statistical equilibrium with the solution, as appears probable, the absolute number of mercury and sulfide ions per cubic centimeter of solution must still be very great. It is almost an axiom of nature that gross experiments can not give us evidence as to the presence of a single ion or molecule in a given portion of matter.

The question as to the reaction of solutions with solids is answered by the knowledge of the structure of polar crystals furnished by X-ray methods. Since the ions are shown to exist as such in the crystal, the mechanism of reaction is not different than in solution. It is probable that a salt goes into solution one ion at a time although recombination may take place between ions after they are in solution.

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"WHAT IS A PLANT?"

IN SCIENCE for February 9 Professor Martin in an article on "What is a plant?" laments his unsuccessful attempt to find a suitable definition of a *plant* "when introducing the subject of botany to college classes."

Assuming that one can be found, is it necessary that the beginning student learn the definition of a plant? Will he know anything more about a plant after learning the definition than he knew before? It seems a bit illogical to attempt definitions before the student has any basis for them. When the word *plant* is mentioned, most beginning students, I imagine, think of some such organism as a tree, a bush, a weed, or a grass. And at that stage of the game such a conception seems far more desirable than an abstract one involved in a definition covering organisms the student has never seen and embracing ideas for which he has no data to support.

Suppose we let undisturbed the student's "indefinite" conception of a plant. Let him find out by laboratory exercises or field work how his "plant" is constructed. Show him by experiments how his "plant" lives, manufactures its food, grows and reproduces. Let him study and get similar data for ferns, mosses, liverworts, algae, fungi, bacteria. All this time he will have been learning *about* plants, their similarities and differences, their processes, their habitats, their relations to him. It appears that then, and only then, will the student be in a position to appreciate plants, their evolution, their relationships and their classification. It will require little effort on the part of the instructor for the student to realize that his earlier conception of a plant needs considerable modification.

If a plant must be defined, let us wait until the student has seen some illustrative material; until he has learned something about processes and structures of things he has no hesitancy in calling plants; and until he has made his own observations on some of the different organisms we call plants. At that time the student will be able to make his own definition based on what he has observed. Such a definition will not only not be abstract and beyond his grasp, but will be his *own*—of tremendous pedagogical significance.

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THAT PLANT

SOME ten years ago a high school girl wrote to me asking for a definition of a plant. Probably she wanted to floor some opponent in an approaching debate. After racking my brain for several days I wrote, "A plant is a living thing which manufactures its own food from the raw materials of earth and air, or one whose ancestors did so." I have used this definition ever since in my botany classes, but rather as a joke than as a serious matter. But the students take it seriously enough and usually commit it to memory. In substance it is obviously identical with that proposed by Professor Martin (SCIENCE, February 9, 1923), only mine is more prolix. If one must have a definition, I know of nothing better. It is particularly useful in showing that definitions are at best a mere makeshift, and very dan-

gerous. Sometimes I insert after the word air "by the agency of light and chlorophyll." The clause relating to ancestors, however, makes the diagnosis of a plant quite impossible, and indeed introduces some very hypothetical material. We try to reach the conclusion that the statement of a real definition requires the contents of at least one book on general botany, with suitable lectures and laboratory experience or field work, and that the definition can be improved by more and more of such study. If there is a better definition, let us have it.

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"EROBIC"

I HAVE read with very great interest the article on the "Bacteriology of Influenza," but I want to make one suggestion in reference to the spelling of "Erobic" and "Anerobic." This, it seems to me, ought to be "Ærobic" and "Anærobic."

I am fully converted to the use of the "e" instead of "æ" and "œ" as a rule, but in "erobic," for instance, "er" misleads one as to its meaning, as it comes from the Greek "ær." The same is true of "anerobic." It seems to me very clear that "æ" should be retained in this case, as an exception.

I confess, when I first read "erobic," I wondered what the word meant. My first idea was of an obscure reference to "eros" in "erobic." I was quite misled, and it took me an appreciable time to determine that it meant "ærobic." I hope that the spelling of these two words in this number of SCIENCE will not be continued.

I am a member of the consulting committee of the Simplified Spelling Board, and therefore am prejudiced in favor of the "e" instead of "æ" or "œ," but this, I think, goes beyond the mark that even the Simplified Spelling Board justifies.

W. W. KEEN

PHILADELPHIA

FEBRUARY 15, 1923.

QUOTATIONS

GIFT TO THE ROYAL SOCIETY

THE magnificent gift, which we announce this morning, by Sir Alfred Yarrow to the nation, through the Royal Society, of £100,000 for the advancement of scientific research should serve two purposes. It should be of most substantial help to numbers of investigators who are hampered or depressed by want of funds, and, as it throws the heavy responsibility of administration upon the Royal Society, it should serve to rehabilitate the illustrious institution in the eyes of those who are concerned not so much with science itself as with the politics of science. To touch on this second point first. There can be no question that Sir Alfred Yarrow, who is himself an honored member of the Royal Society, has done wisely in entrusting his fund to the society, for there is no other body possessed of traditions, prestige and authority to equal it in the kingdom, or, indeed, in the world. But of late years there has been a strong disposition to criticize the society's attitude towards the practical affairs of life. It has been felt that it has often preferred a dignified position of aloofness towards current interests, and it has seemed to let go by default some of its unique claims to be the real leader and adviser of the nation in scientific administration. It ought, one might argue, to be the invariable channel through which private benefactions to science should be directed. It ought to have a controlling voice in the application of government grants for scientific purposes; it ought, in short, to be as thoroughly active in practical matters as its individual members are in their own spheres of study. The obligations which this princely endowment now casts upon it should help substantially to enhance its authority. From this point of view alone Sir Alfred Yarrow's gift will, we believe, be welcome; for the Royal Society is of such a composition that its voice can never be negligible; its opinion on all matters connected with science must always be of paramount influence, and no one who has the interests of science or of knowledge at heart would care to see it miss its opportunities. We urged considerations of this kind last December, when the new council was appointed; and now the society has a brilliant opportunity of making good the ground that some of its sincerest well-wishers may have feared that it had lost.

As for the need of such an endowment for