When cultured in a standard alkaline mannite solution 41 per cent. of the soils failed to show any *Azotobacter* growth. The average nitrogen fixed, per 100 c.c. cultural solution, in such cultures was 7.76 mg. The average nitrogen fixed in cultures showing *Azotobacter* was 16.22 mg. per 100 c.c. cultural solution.

A study of the reaction of these soils gave very interesting results. The hydrogen ion concentration of an aqueous extract of the soils was measured by the colorimetric method outlined by Clark and Lubs.[1]

The range of hydrogen ion concentration in the soil extracts, prepared by shaking one part of soil with one part of water and centrifuging expressed in P_H was from 5.3 to 7.8. All of the extracts from soils which developed *Azotobacter,* with the exception of three, gave a P_H of 6.0 or above. All of those which failed to give *Azotobacter,* with the exception of three, gave a P_H of 5.9 or less. These results would indicate that the absolute reaction is probably the major factor controlling the presence of *Azotobacter* in soils.

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Designation of Specializing Physicists

Physicists specializing along certain definite lines in such a way or to such a degree that the broad term physicist is not sufficiently descriptive of their professional activities, are frequently at a loss for a suitable designation. For example, a physicist engaged in industrial physics along the lines of electricity may not consider himself an electrical engineer, and still less an "electrician" in the ordinarily accepted use of the term. What shall he call himself? A physicist specializing in mechanics may be neither a mechanical engineer nor a mechanic or mechanician. Similarly one specializing in heat may not be a heating engineer, and one in light may be no optician. The specialist in sound who is now coming into recognition more and more has not even the restricted range of choice given to the others cited.

[1] *Journal of Bacteriology,* Vol. 2, Nos. 1, 2 and 3.

The answer proposed to the above problem involves a new set of designations of the main subdivisions of the broad science of physics, designations obvious enough in themselves, which commend themselves as logical and acceptable from a terminological standpoint, quite apart from the solution thereby offered of the question raised in the foregoing. It will be noted that the terms being derived from the classic Greek, are international. The following table will make the matter clear.

The Science of	Proposed Designation	Designation of Specialist
Mechanics	Mechanology	Mechanologist
Sound	Phonology	Phonologist
Heat	Thermology	Thermologist
Light	Photology	Photologist
Electricity	Electrology	Electrologist
Magnetics	Magnetology	Magnetologist
Radiation	Radiology	Radiologist

A suggested sample definition is as follows: A mechanologist is a person who is versed in the science of mechanics, or mechanology, and who may, in addition, be skilled in applying the science.

The terms proposed are so obvious that there is no need to make an extended argument in favor of their adoption. The proposals are made with the thought that the need for such terms will become more and more evident through the increased entrance of physics and physicists into industrial and practical work, and it is well that a suitable terminology should be ready at hand for adoption as required.

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April 24, 1918

Scientific Books

The Science and Practice of Photography. By John R. Roebuck. New York, D. Appleton and Company. 1918. Pp. VIII + 298. $2.00.

In this book Dr. Roebuck publishes the course in photography which has been given under his direction at the University of Wisconsin.