

1-1932

The Apology of a Pedagogue: Editorial

Follow this and additional works at: https://scholarworks.uni.edu/science_bulletin

 Part of the [Health and Physical Education Commons](#), and the [Science and Mathematics Education Commons](#)

Let us know how access to this document benefits you

Copyright ©1932 by Iowa State Teachers College

Recommended Citation

(1932) "The Apology of a Pedagogue: Editorial," *Science Bulletin*: Vol. 4: No. 5, Article 5.

Available at: https://scholarworks.uni.edu/science_bulletin/vol4/iss5/5

This Contents is brought to you for free and open access by UNI ScholarWorks. It has been accepted for inclusion in Science Bulletin by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

SCIENCE BULLETIN

Editor-in-chief: Dr. Roy L. Abbott; Advisory Board: Dr. L. Begeman, Head, Department of Physical Science; Dr. E. J. Cable, Head, Department of Natural Science.

Issued monthly. Entered as second class mail matter at the post office, Cedar Falls, Iowa, under the Act of August 24, 1912.

Five cents per copy; 35c per year outside of Iowa.

THE APOLOGY OF A PEDAGOGUE EDITORIAL

"The world's stock of knowledge is seldom augmented by pedagogues."
H. L. Mencken.

With all due respect to the author of the above and the several brilliant things he has written, bosh! The sentence makes interesting reading, and doubtless returned the writer several cents per word, besides giving his doting henchmen many chuckles at the expense of the puerile pedagogue. But mere pertness of expression connotes neither truth nor profundity, and had the writer of the above sentence set about deliberately to formulate a fundamental untruth, he could not have fashioned one whose Munchausen quality was more obtrusively obvious.

"Take physics or metaphysics, as you please," he challenges. Very well, what have professors of physics contributed? What about pedagogue Helmholtz? Born under the very shadow of Potsdam, he should fit our critic's racial qualifications, but let us judge him on performance alone. This pedagogue practically founded physiological optics, invented the ophthalmoscope, without which the oculist would be sadly crippled, and did more for acoustics than any other man.

Hertz, another pedagogue, discovered a method of detecting and receiving electromagnetic waves which had already been theretically postulated by pedagogue, Clark Maxwell. These two contributions are the very basis of our present day wireless and radio. Pedagogue, Sir Isaac Newton, gave us the laws of motion and the theory of gravitation, and the discoveries of Faraday made possible the magneto and dynamo. Roentgen gave us the X-rays, Dalton the theory

of the atom, and Thompson, Lorenz, and Rutherford have produced the electron, and elucidated the intimate structure of matter.

The pedagogue seldom contributes? What about Einstein and relativity; Michelson and stellar measurement; Milliken and short wave lengths; Currie and radium?

Look at the field of chemistry and note the contributions of the humble pedagogue. Mendeleef with his periodic law; Arrhenius with his theory of electrolytic dissociation; Berthelot with his synthesis of fats; Fischer with his work on proteins; McCollom with his contributions to dietetics; Kekule with his discovery of the secret of the carbon ring upon which has hinged three-fourths of the advance of organic chemistry.

Turn to the field of biology. Who doesn't know of pedagogue Pasteur and his studies in bacteriology and immunity, the very essence of our modern treatment of disease? How many thousands have been grateful to pedagogue Bordet for his diphtheria antitoxin; to pedagogue Lister for his antiseptic surgery; to pedagogue Ehrlich for his salvarsan?

"The world's stock of knowledge is seldom augmented by pedagogues?" When the writer of that sentence looks up at the stars and planets, their ways have been made known to him by Copernicus and Galileo and Kepler, all pedagogues. When he reflects why the moon hangs in space and flies neither off at a tangent nor comes crashing into the earth with cataclysmal momentum, his mind is set at rest by pedagogue Newton. Also, he calls up his publisher over pedagogue Bell's telephone; sends a wire by the telegraph of pedagogues Henry and Morse, and pays his electric bills in the Volt-Amperes of two more of the tribe! His very anatomy has been elucidated by a thousand carving carnivorous pedagogues from Galen to Vesalius to Cuvier. Even his anatomical topography is designated by professorial appellation, and daily he carries about with him—and in spite of him—his Eustachian tubes, his Malpighian corpuscles, his Columns of Bertini, and his Bowman's capsules. Pedagogue Claude Bernard gave him his knowledge of his gastric and pancreatic juices, of the gly-

cogenic function of his liver, and of the intricate working of his sympathetic system. Von Baer gave him an account of his embryonic origin, and—but the list is endless. It is true, and no teacher denies it, that many notable contributions to human knowledge have been made by men who were never associated with the teaching profession. Darwin and Wallace, the founders of natural selection, were not teachers, but they are more than balanced by such evolutionary pedagogues as Lamarck, DeVries, Huxley, and Cope. Mendel was a teacher, and Bateson, Morgan, Punnett, Guyer, and a dozen other teaching professors have contributed largely to genetics since Mendel's day.

The pedagogue has entered and contributed to every field of human knowledge. He has done but little in literature, it is true, but science would be nothing without him. Philosophy has its James and Dewey, and Herbart, and Hegel and Kant—all professors. Music boasts of the contrapuntal writings of pedagogue Bach; Mendelssohn and Liszt were in no way greater than as teachers, and much of the superb music of the Catholic church was written by Chembini, famous pedagogue of the Paris Conservatory. And we need not mention such famous professors as McDowell, Horatio Parker, and Stielman-Kelley!

"The world's stock of knowledge is seldom augmented by pedagogues?" The man who wrote that sentence is but a puny fly vainly struggling against the web of knowledge woven about him by a universal professoriate. Try as he will, he cannot escape the ubiquitous, puissant pedagogue. But as he himself has so well said, "One does what one can."

CURRENT INDUCTION

The modern transformer, now quite generally used in the commercial distribution of electrical power in the cities of the world, ranks next to the dynamo in importance in the electrical world. The transformer is an invention which embodies the practical application of Faraday's first experiment in current induction, in which a closed iron ring carrying a primary coil and a secondary coil was used.

Commercial transformers, Fig. 1, can be observed mounted high on

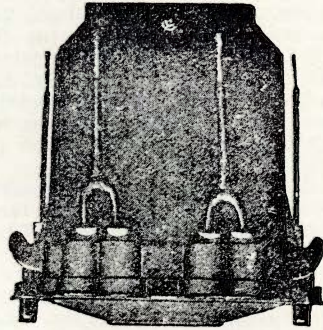


Figure 1

poles in every community where an alternating current of electricity is used for lighting purposes. The purpose of these transformers is to reduce the high voltage of the current generated by the dynamo to a lower, safe voltage for currents used in the house, store and factory.

The function of a transformer can be easily grasped from a study of the diagram in figure 2. In this sketch A represents an alternating dynamo. The rectangular soft iron frame shown at the center of the sketch carries a primary coil and a secondary coil. The terminals of the primary coil, with many turns of wire are directly connected to the terminals of the dynamo circuit. The terminals of the secondary coil are connected, as shown, to four electric lamps. The lamps are arranged in parallel across the leads from the transformer, which is the usual method of connecting electric lamps in a house circuit.

According to theory, the voltage of the dynamo is to the voltage between the lamp terminals in an arrangement of this kind, as the number of turns in the primary coil is to the number of turns in the secondary coil. Assuming the number of turns in the primary to be 220 and the number of turns in the secondary to be 22, we have a ratio of 10 to 1. Consequently, if the dynamo furnishes a voltage of 1100 volts then the lamp terminals will have one-tenth that much or 110 volts. If the primary of the transformer had only 11 turns then the dynamo would have to furnish 220 volts to produce 110 volts for the terminals in the