block. Mr. Packard gave some excellent suggestions along this line at our last meeting. I will add only one more. One of my classes last term, instead of the usual exercise on the photometer, measured the candle power of an incandescent lamp at different pressures from 80 to 120 volts noting the improvement both in color and efficiency.

Let me summarize in four propositions:

1. The interests and needs of the pupil should be the determining factor in the arrangement of courses and the choice of method.
2. It follows that a high degree of uniformity in teaching physics is neither practical nor desirable.
3. Wherever practicable, different courses should be provided for girls and boys.
4. Physics should be taught not as a preparation for college but as a preparation for life.

PHYSICS DEPARTMENT ELECTRIC SYSTEM.

BY H. C. KRENERICK,

North Division High School of Milwaukee.

The accompanying print and drawing show the switch board and electric system of the physical science department of the new North Division High School of Milwaukee. The board is in the front part of the lecture table where by means of two doors it can be exposed to the view of the class or by removing the portion of table top directly above, the upper switches and storage battery terminals may be reached from the rear of the table. It is provided with direct and alternating current meters and rheostats. The alternating current rheostat is of sufficient size to control the 220-volt current for the opaque projector. The motor generator is stationed in the work room, a sufficient distance that no sound from the motor is heard in the lecture room.

I shall not take the space to explain in detail the various connections shown in the drawing. With but little study, anyone will find that the system is simple and not at all as complicated as it may at first appear. The switches controlling the circuits to chemical laboratory, physics laboratory, and terminals on board from which current will be taken for use on lecture table, are

connected in parallel to a main circuit on the switch board which can be fed by any of the following currents: From 25 to 45 volts direct current from motor generator; 110 volts direct current from generator in basement (not yet installed); either 110 or 220 volts alternating current from city mains; and any possible

combination from eight storage cells placed in the attic. By means of plug and cord connectors for the battery terminal receptacles (not shown in picture), any cell or combination of cells may be charged at one time or similarly the voltage may be tested at any time during discharge. The physics and chemical laboratory switches are each connected directly to a group of two storage cells so that, if desired, the laboratories may be supplied with current while the switchboard is being used for demonstration purposes in the lecture room.

THE CLASSIFICATION OF LABORATORY APPARATUS.

BY A. T. SEYMOUR,

Orange, New Jersey.

The following classification is based on the systems in use in a number of high schools and colleges. It is elastic and simple, adaptable to any laboratory, small or large. It is not necessary that the apparatus should be located in a single room. All that is necessary is that the apparatus should have a permanent location.

First, group the apparatus as well as possible by subjects. Physics will naturally be grouped under mechanics, heat, light, sound and electricity.

Chemistry apparatus may be grouped under the elements, potassium, sodium, silver, etc. When the apparatus has been thus located where it is to stay, each section should be numbered. It is best to place a number *over* the position of the apparatus. If there is a column of shelves one above the other, put a number at the top and then letter the shelves alphabetically from top to bottom. The numerals should be three fourths of an inch high and the letters should be half inch letters. These sizes are not too large to look well and may be seen across an ordinary room. When the numbering of the sections and the lettering of the shelves has been done, the position of each piece should be numbered. Thus if ten pieces of apparatus are on a single shelf, their places should be stamped from one to ten. In order to ensure the return of apparatus to its proper location after being used, each piece should be marked with its numbers and letter, the letter being placed in the middle and the shelf number last. Thus if a piece of apparatus stands on the fourth shelf from the top of