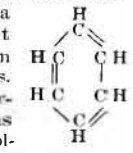
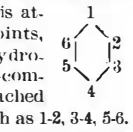
ments into simpler forms. It has not, however, yet been done to the acceptance of competent chemists.

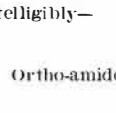
(8597) G. M. C. asks: 1. What is the difference between the current generated by a magneto machine and that generated by a dry battery? I notice that the former cannot be used like the latter for lighting a miniature lamp and for some other purposes. A. The magneto of a telephone set generates an alternating current of too small amperage to light a lamp. 2. Will a standard Fuller battery become exhausted by standing with its poles disconnected? If so, why? A. All bichromate cells should have the zincs lifted out of the liquid when not in use, because the acid acts upon and dissolves the zinc all the time it is in contact with it. 3. When the poles of a battery are connected through a circuit of practically no resistance, so that the battery does no work, what becomes of its energy? A. You are in error in saying that the battery does no work when on short circuit. It is sending a maximum of current and produces a maximum of heat. 4. Can an incandescent lamp be destroyed by sending too strong a current through it? A. Certainly. 5. What are gas mantles composed of? A. Gas mantles are composed of oxides of the rare earths upon a mesh of thread, which burns when the mantle is lighted by a match, leaving the oxide to glow with the heat of the flame.

(8598) H. M. W. asks: Will you kindly inform me what the following consist of, viz.: Ortho-amido-phenol, 4 chlor-ortho amido-phenol, 4 6 dichlor-ortho-amido-phenol, 4 nitro-ortho-amido-phenol, 4-6 dinitro-ortho-amido-phenol, 4 chlor-6 nitro-ortho-amido-phenol? A. The composition of the organic compounds is difficult of representation except by the method of the chemistries, or by means of a diagram. Benzole, or benzene, is the basis of the "aromatic" or "ring" compounds. Its formula is C_6H_6; or expressed graphically, it is a lozenge-shaped figure, as shown here, with six points for bonds. Since this is a very troublesome formula to write out continually, it has come to be conventionally symbolized by a hexagon, the six angles of which are numbered from the top around with the hands of a clock from 1 to 6. When nothing is attached to any of the numbered points, it is understood that one atom of hydrogen occupies the position. "Ortho-compounds" are those in which the attached radicals occupy adjacent points, such as 1-2, 3-4, 5-6. "Meta-compounds" are those in which the attached radicals occupy alternate points, as 1-3, 2-4, 3-5. "Para-compounds" are those in which the radicals occupy opposite points, such as 1-4, 2-5, 3-6. "Phenol," or carbolic acid, C_6H_5-OH, is denoted by the diagram "Amido-compounds" are those containing the radical NH_2. Hence amido-phenol is represented by the diagram 





Hence also there may be three amido-phenols—ortho-amido-phenol, meta-amido-phenol, and para-amido-phenol. The compounds named above are all of the "ortho" series. The numbers used in the names refer to the number of the points of the lozenge as above stated. It is now possible to indicate the composition of the compounds intelligibly—

Ortho-amido-phenol, 

4 chlor-ortho-amido-phenol,

4-6 dichlor-ortho-amido-phenol,

4 nitro-ortho-amido phenol,

4-6 dinitro-ortho-amido-phenol,

4 chlor-6 nitro-ortho-amido-phenol,

The formulas in the ordinary mode of writing are as follows:

Ortho-amido-phenol,
$C_6H_4\ NH_2$-OH.

4 chlor-ortho-amido-phenol,
C_6H_3-Cl-NH_2-OH.

4-6 dichlor-ortho-amido-phenol,
C_6H_2=Cl_2-NH_2-OH.

4 nitro-ortho-amido-phenol,
$C_6H_3\ NO_2\ NH_2$-OH.

4-6 dinitro-ortho-amido-phenol,
C_6H_2=$(NO_2)_2$-NH_2-OH.

4 chlor-6 nitro-ortho-amido-phenol,
C_6H_2-Cl-NO_2-NH_2-OH.