carbon lamp, owing to the shadows cast by the unused carbon. He stated an interesting experiment conducted by himself on two single carbon arc-lamps in series, one with $\frac{5}{8}$ inch 14 inches carbons, and the other with carbons $\frac{1}{2}$ inch, 12 inches. The lamps were adjusted to the same voltage. Photometric tests showed no difference in the two lights He ended by giving much valuable information relative to the cost, etc., of the double carbon arc-lamps.

This was the last paper to be read, after which some business was transacted. The members elected Sir William Dawson, Mr. F. R. Redpath and Prof. H. T. Bovey, honorary members of the Association. The city decided upon for holding the next Convention in February, was the home of the President, Buffalo, New York.

After many votes of thanks were passed to different people and companies for the kind hospitality showed to them, the meeting adjourned.

EXPLANATION OF ELECTRICAL WORDS, TERMS, AND PHRASES.

(From Houston's Dictionary.)

Boreal Magnet Pole.—A name sometimes employed in France for the south-seeking pole of a magnet, as distinguished from the austral, or north-seeking pole.

That pole of a magnet which points toward the geographical south.

If the earth's magnetic pole in the Northern Hemisphere be of north magnetism, then the pole of a needle that points to it must be of the opposite polarity, or of south magnetism. In this country we call the end which points to the north the *north-seeking end*, or the *marked pole*. In France, the end which points to the north is called the *austral pole*. Austral means south pole.

The austral is therefore the north-seeking pole, and the Boreal the south-seeking pole.

Boucherizing.—A process adopted for the preservation of wooden telegraph poles, by injecting a solution of copper sulphate into the pores of the wood.

Bound and Free Charge.—The condition of an electric charge on a conductor placed near another conductor, but separated from it by a melium through which *electrostatic induction* can take place.



The charge, on a completely isolated conductor, readily leaves it when put in contact with a good conductor connected with the ground. The charge in this condition is called a *free* charge. When, however, the conductor is placed near another conductor, but separated from it by a medium through which induction can take place, a charge of the opposite name is induced in the neighboring conductor. This charge is held or bound on the conductor by the mutual attraction of the opposite charges. To discharge a bound charge, both conductors must be simultaneously touched by any good conducting substance. The bound charge was formerly called *dissimulated* or *latent electricity*.

Box, Distribution, for Electric Arc Light Circuits.—A device by means of which arc and incandescent lights may be simultaneously employed on the same line, from a constant current dynamo electric-machine or other source.

A portion of the line circuit, whose difference of potential is sufficient to operate the electro-receptive device, as for example an incandescent lamp, is divided into such a number of multiple circuits as will provide a current of the requisite strength for each of the devices. In order to protect the remaining of these devices so interpolated, on the extinguishment of any of the devices, automatic cut-outs are provided which divert the current thus cut off through a resistance equivalent to that of the device.

A variety of distribution boxes are in use.

The character of circuit employed in connection with distribution boxes is shown in Fig. 61.

Brackets, Telegraphic, or Arms.—The supports or cross pieces on telegraph poles, provided for the insulators of telegraphic lines.

Telegraphic insulators are supported either on wooden arms, or on iron or metal brackets.



Fig. 65, shows a form of iron bracket. Fig. 66, shows a form of wooden arm.

Various well known modifications of these shapes are in common use.

Brake, Electro Magnetic.—A brake for car wheels, the braking powers for which is either derived from electro-magnetism, or is thrown into action by electro-magnetic devices.

Electro-magnetic car brakes are of a great variety of forms. They may, however, be arranged in two classes, viz.:

.(1) Those in which magnetic adhesion or the magnetic attraction of the wheels to the brake is employed.

(2) Ordinary brake mechanism in which the force operating the brake is thrown into action by an electro-magnet.

Branch-Block.—A device employed in electric wiring for t_{ik} king off a branch from a main circuit.

Breaking Weight of Telegraph Wires.-The weight which when hung at the end of a wire will break it.

Ordinary copper wire will break at about 17 tons to the square inch of cross-section. Common wrought iron breaks