

**Diffusion Phenomena of the Alums.** C. L. PARSONS and W. W. EVANS. (*J. Amer. Chem. Soc.*, xxxii, 1378.)—When dissolved in water alums decompose into simple sulphates which may be separated by diffusion. The alums examined were ammonium-chromium, potassium-chromium, ammonium-aluminum, potassium-aluminum and ammonium-ferric alums. It was found that the separation by diffusion was more readily effected with the chrome alums than with the aluminum alums.

**A New Remedy for Burns.** ANON. (*La Nature*, No. 1959, 13.)—This is simply a lukewarm yeast poultice; either the dry yeast of grain or the wet yeast of breweries. The poultice is applied to the burns as quickly as possible. The pain subsides quickly and healing is remarkably hastened. From the recent work of Fernbach it appears that the cellules of the yeast can absorb the bacterial poisons.

**Deciphering Writing on Burned Paper.** ANON. (*La Nature*, No. 1759, 13.)—This is a most interesting problem either from the legal point of view, or from that of examining historical or other documents. The ashes of a large number of papers have been studied, and the traces left by the ashes of different inks or pencils. All trace of writing made with an ink composed of organic coloring matter or of lamp-black, *e.g.*, blue, red, violet and printing inks disappears on incineration; while inks composed from an iron salt, such as are generally used in Europe, leave a red-brown residue of ferric oxide. In this case the traces of writing become quite visible in the ashes of completely burned paper, and interesting documents, which were accidentally, or intentionally consumed, have been thus reproduced.

**The Daily Motion of the Top of the Eiffel Tower.** R. M. BOURGEOIS. (*Monteur scientifique*, xxiv, 764.)—The Eiffel tower moves perceptibly daily under the influence of the heat of the sun. The extreme daily variation of the tip of the lightning conductor is the same as in 1896, and varies according to the atmospheric conditions from 3 to 17 cm. The mean position of the lightning conductor with reference to a fixed point has not sensibly varied from 1896 to 1908. The change of direction of the motion with the seasons confirms the fact, that the daily displacement of the top of the tower is certainly due to the sun.

**Dielectric Behavior of Melted Vaseline.** L. MALCLÈS. (*Comptes rendus*, cli, 63.)—A condenser made with a cell of insulating material, in which the vaseline is placed, is connected with one pair of quadrants of an electrometer and balanced against an adjustable condenser. The condensers are charged and a balance adjusted, and any after-effect is shown by a deflection of the electro-

meter needle. With vaseline in the ordinary semi-fluid state there is no after-effect, indicating that in this state vaseline is a perfect insulator, with a dielectric constant 1.97. When the cell between the condensers is filled with liquid vaseline and the vaseline allowed to cool and solidify, anomalous effects are observed, which the author explains by assuming that vaseline acts as a medium containing free ions, whose mobility is zero in the semi-fluid state but observable in the liquid state.

**The Law of the Variation of the Coefficient of Specific Magnetization of the Elements by Heat.** KOTARO HONDA. (*Mon. Sci.*, xxiv, 767.)—The effect of a rise in temperature on the coefficient of magnetization of an element is equal to that of a small increase in the atomic weight of that element. This law, to which no serious exception is found, is certainly very important to the electronic chemistry of matter.

**John Mayow and His Theories.** MAX SPETER. (*Chem. Ztg.*, xxxiv, 946.)—This is a history of the views and experiments of John Mayow, who lived from 1645 to 1679, whose theory of respiration and combustion first developed the correct view of the matter, thus forestalling Lavoisier by more than a century. The evidence goes to show that Lavoisier was well acquainted with, and borrowed from, Mayow's work, although he does not refer to him.

**Preparation of Titanium.** M. A. HUNTER. (*Amer. Chem. Soc. Jour.*, xxxii, 330.)—Pure titanium cannot be obtained by the methods described by Berzelius, or Wöhler and Deville, or by Moissan. A yield of pure Ti, amounting to about 90 per cent. of the theoretical, was obtained by the reduction of titanium tetrachloride with sodium in an air-tight steel cylinder. The metal titanium resembles polished steel. When cold it is hard and brittle, but is very malleable at a low red heat. Its specific gravity is 4.50, and its melting point lies between 1800° C. and 1850° C.

**Improved German Silver Alloy.** W. R. BARCLAY and J. RODGERS. (*Soc. Chem. Eng. J.*, xxix, 161.)—The addition of a small percentage of cadmium to low-grade German silver, increases the hardness and general working qualities and color to that of a first or second grade alloy containing 22 to 30 per cent. of nickel. An example of modified German silver is copper 57 per cent., nickel 12.5, zinc 28.5, and cadmium 2 per cent.

**French Service Powder.** G. GEUMANN. (*Zeit. des Schiess- und Sprengstoffw.*, v, 449.)—From 1866 to 1884 considerable alterations were made in the composition and form of black powder and also in the nature of the charcoal used. In 1884 Vieille introduced a smokeless powder, known as "B" powder which with