

Gum Arabic Solution.—The adhesiveness and durability of a solution of 100 parts gum arabic in 250 parts water may be increased by adding 2 parts of sulphate of alumina.—*Polytech. Notizbl.* C.

Artificial Quartz Crystals.—MM. Friedel and Sarrazim have obtained quartz crystals by the action of hydrochloric acid upon gelatinous silica in closed vessels, at a temperature of 350° (662° F.).—*Soc. Chim. de Paris.* C.

Defoy's Electric Bit.—The reins enclose a small conducting wire, extending from the bit to a small electro-magnet. By turning the crank of the electro-magnet, a slight current is sent to the horse's mouth, causing such surprise that he stands immovable, and is easily tamed by caresses. The current is not strong enough to give a shock or to stupefy the animal.—*Les Mondes.* C.

Heat of the Electric Arc.—Prof. Rosetti, of the University of Padua, has measured the temperatures of the electric arc and of the carbon points. With 80 Bunsen elements he found for the negative 2400° (4352° F.), for the positive pole 2870° (5198° F.), and for the arc 359° (6332° F.). These temperatures decrease with an increase in the number of elements employed.—*Soc. Franc. de Phys.* C.

Electric Light in Persia.—Fabius Boital recently exhibited the Jablochhoff light before the Shah of Persia. When the machine was started, the Shah turned on the light by a gentle pressure, and all the bystanders gave a shout of admiration, which was repeated when they found that the street lights were kindled at the same instant. M. Boital has been engaged to introduce a large supply of electrical apparatus, to build extensive gas-works, to erect a series of dwellings of a plan and architecture hitherto unknown in Teheran, and to construct an Industrial Palace.—*Les Mondes.* C.

Paper Window-shutters.—William Hipkins, of Belair, Ohio, has taken out a patent for window-shutters in which pasteboard is substituted for wood. The slats and panels can be covered with colored or stamped paper, so as to imitate any desired kind or pattern of wood. The inventor claims as advantages for such shutters that they are lighter and cheaper than wood, that they do not warp or split, that they can be easily fitted to new positions, that they are susceptible of a great variety of patterns, and that they will contribute to an improvement in the appearance of cheap dwellings.—*Fortsch. der Zeit.*

C.