

Strength of Cast Steel.—As a proof of A. von Gautier's statement, that the strength and ductility of steel are increased by heating and subsequent slow cooling, von Tunner experimented with No. 4 Inneberg manganese-steel. His experiments were satisfactory, but he obtained still better results by hammering, rolling, or pressing the reheated steel.—*Kärnthn. Zeitsch.* C.

Protection of Bank-Notes against Fire.—A German inventor has devised a bank-note album, with leaves of asbestos-paper, for the protection of notes, checks, and valuable documents. By placing them between the asbestos leaves, especially if the book is firmly clasped, they may be kept legible, even after exposure to a fire which reduces them to cinders.—*Papier-Zeitung.* C.

Globular Lightning.—M. G. Planté has experimented upon distilled water with an electric current of high tension, by joining 20 secondary batteries, of 40 couples each, producing a current about equivalent to 1200 Bunsen elements. He thus produces a number of beautiful luminous effects, constituting "a true electric kaleidoscope;" imitates the phenomena which result from the fall of liquid drops on a plain surface, and shows that, with a sufficient quantity and tension of electricity, we can obtain not only electrized liquid globules, but even the electric spark itself in globular form.—*Comptes Rendus.* C.

Chemical Changes in Works of Art.—S de Luca describes six bronze goats, with lead bases, found in Pompeii. They were evidently designed for weights. The lead has been mostly changed into an amorphous mass of white carbonate. On the one-pound weight a portion has become translucent and partially crystalline. On the ten-pound weight there are definite crystals of carbonate, with a brilliant lustre. Their formation, in a period accurately known, is noteworthy.—*Comptes Rendus.* C.

Tunnel under the English Channel.—The experimental works at Sangatte are well under way. The shaft is already sunk to a depth of 100 metres below low water mark. Two pumps are employed to remove the water, which flows abundantly. A trial gallery has been begun, in the chalk, under the sea, perpendicular to the shaft. It is to be 1 kilometre long, and, if no difficulties arise during its completion which show that the work is impracticable, the tunnel will be promptly begun.—*Les Mondes.* C.