

Rail-Profiles.—Moritz Pollitzer, chief engineer of the Austrian “Staats Eisenbahn-Gesellschaft,” has investigated the sections of steel rails, with a view to determine the profile which will give the greatest wear at the least cost.—*Zeit. des Oester. Ing.- und Arch.-Verein.*

C.

Manganese Bronze.—According to Gintl, a tough, malleable bronze, of nearly the color of brass, contained 76·710 parts copper; 16·147 manganese; 5·490 zinc; ·320 iron; ·762 tin and silicon. This represents an alloy of 15 parts copper, 4 parts manganese, and 1 part zinc.—*Techn. Blätter; Dingler's P. Jour.*

C.

Spectrum-Projection.—By means of a Leyden jar and induction coil, and three Bunsen cells of 2 gallons, clear and continuous spectra can be projected on the screen, without a calcium light. The spectral lines are zigzag, like the sparks from the coil. Soda, copper, zinc, calcium, and brass, may be satisfactorily employed.—*Les Mondes.*

C.

Sketching-Paper.—MM. Carl Schleicher and Schüll, of Düren, Germany, prepare rolls of sketching-paper of excellent quality, and uniformly ruled in squares of 1 centimetre, $\frac{1}{2}$ centimetre, and 1 millimetre on the side. The difference in the breadth of the rulings is so plainly marked that any projections can be readily made, without instrumental measurements.—*Pap.-Zeitung.*

C.

Microscopic Organisms.—In two important papers, presented to the French Academy on April 30 and July 16, MM. Pasteur and Joubert show that the terrible animal disease which is known as *charbon* or *sang de rate* (carbuncular gangrene), is caused by microscopic bacteria, which were first observed by Dr. Davaine, in 1850. It may, therefore, be classed with trichinosis and the itch, as a parasitic disorder. Vibrios, bacteria and bacteridia, are all found under two essentially distinct forms; either in translucent threads of variable length, multiplying rapidly by division, or in groups of little brilliant corpuscles formed in the interior of the threads, which separate from the parent, and constitute an apparently inert mass of points, from which countless legions of filiform individuals may come, having the same two-fold methods of reproduction. The threads may be killed by drying, or by a heat much below that of boiling water. The germs, when dry, withstand temperatures from 120° to 130° C., or 248° to 266° F.—*Comptes Rendus.*

C.