Peroxide of iron,
Oxide of silver Yellow.

by staining,

G. T. S.

Superheated Ice.

THOMAS CARNELLEY, in Nature for Feb. 10, 1881, gives an account of a series of experiments made by him upon ice at low pressures. In this article he claims to have heated ice as high as 180° C. without melting it. The pressure during the heating was kept below 4.6 mm., this being the tension of its vapor at the melting point.

At the suggestion of Prof. Rogers, I began a series of experiments to confirm or to disprove Carnelley's results. As an account of the work done and the apparatus used would be very long, I shall confine myself principally to the results obtained. The apparatus used consisted of a flask containing about 500 cc., a barometer tube about four feet long, and a thermometer. Around the bulb of the thermometer was frozen a cylinder of ice, the water being previously freed from air by long boiling. The thermometer and barometer tube were passed through a rubber stopple, and inserted in the flask, which was filled with mercury at a temperature below 0° C. The whole apparatus was then inverted, and after a Torricellian vacuum had been formed in the flask, the barometer tube was melted off, and the ice left in a hermetically sealed space. The flask was placed in a freezing mixture of ice and salt, and the projecting neck of the flask adjacent to the cylinder of ice heated with a blast lamp.

The following was the invariable result: First, the ice, which had fallen in temperature to about -10° C., became heated to 0.0°, but in no case above this temperature; second, its volume very sensibly diminished; third, when the temperature 0.0° was attained the ice began to melt, unless the application of heat was discontinued.

It will be seen that these experiments go to disprove Prof. Carnelley's results.

The Lowell School of Design.

THE last exhibition given by the pupils of the Lowell School of Practical Design was so successful, many of the patterns being beautiful as well as novel, that a brief history of the school may be interesting at this time.

Previous to the year 1872, all designs were either bought in England and France, or designers were brought to this country at enormous expense.

Mr. Little, agent of the Pacific Mills, having a firm conviction that Americans could, with instruction and application, compete successfully with the foreigners then employed, proposed to Mr. Lowell to found a free school for this purpose, open to both sexes. After due consideration, and being assured that manufacturers would employ capable American designers, Mr. Little determined, with the aid of Mr. Charles Kastner, to make the trial. Mr. Kastner at this time was designing at the Pacific Mills, where he had won quite a reputation.

Brought up as he was in the atelier of his uncle, M. Jean-Baptiste Lebert, in Paris, one of the most famous designers of his day, he was conversant from early youth with all the methods of the French school of design, and the selection could not have been better.

Thus the school started amidst the sneers of designers, and the grave doubts of the manufacturers as to its ultimate success; and to-day, after ten years, not only holds its own, but it may truly be said to stand at the head of institutions of this kind in America. The number of graduates is seventy-four, many holding responsible positions at our large mills.

Designing for prints seems to receive the most attention, Brussels carpeting next; and among the designs in the last exhibition were several fine wall papers, dados, etc. The rooms occupied by the school are cramped and inconvenient, and the need is greatly felt of larger ones. Already the desks are all occupied, and applicants are obliged to propose their names a year in advance to gain admission.

Another department was added in 1877, en-