

EVENING NEWS.

Tuesday June 18, 1913.

Experiments in New York with Toughest Glass.

The ancient admonition to occupants of glass houses is in danger of losing its force. M. A. de la Bastie, a Frenchman, has already succeeded in making the demolition of that hitherto fragile substance a matter of no small difficulty. When saucers, plates and glass dishes of every description, not to mention watch crystals and large plates of window-glass, are thrown about a room in a miscellaneous manner, with greater damage to the floor than to the missiles, the inquiry, "Can't glass be made practically unbreakable?" becomes one of interest.

All this and much more was done by Prof. Eggleston, of the School of Mines, yesterday, at Cooper Institute, with the La Bastie glass. Before beginning his experiments the Professor assured his audience that although he had been engaged in experimenting on the substance, at the request of Messrs. Paton & De la Bastie, during the past two months, he was not yet prepared to state all the properties of the wonderful glass. The discovery, or it might be called the invention, of M. de la Bastie, was only made last autumn, but for the last ten years he has devoted his time and attention to the matter, having during that time tried over 2,000 different baths, the peculiar properties of his glass being obtained by plunging ordinary glass when at a great heat, into a bath composed mainly of fatty substances. The "peculiar properties" are toughness to an almost incredible degree, and non-conduction of heat to an absolute degree. Further than the heating and bathing in fatty substance (the composition of which is of course a secret) there appears no difference in its manufacture from that of ordinary glass, and yet its whole molecular construction is different. When broken, as it can of course be by sufficient force, it rivals the traditional "one-horse shay" in the totality of its destruction, a piece three inches square furnishing several hundred fragments, each fragment paradoxically being an entire piece by itself, with smooth edges so that one might safely thrust his hand into a barrel of this broken glass and walk away uninjured. The glass exhibited yesterday was hardly as smooth and clear as might be necessary for some purposes, but Prof. Eggleston stated that this defect was owing entirely to the crude means at present provided for the process, and not to any fault in the process itself. The experiments yesterday were conducted in the presence of a large number of spectators.

As a preliminary, the Professor threw a few pieces of red glass, of considerable thickness, about the room, which caused a small amount of damage to the many glass dishes present; next saucers and various other glass dishes of more fragile dimensions bounded unbroken from the hard floor, the smaller pieces being dried, and when in handful, watch crystals and long thin pieces of glass fell on the floor and remained whole, a round of applause broke out from the audience. The next experiment consisted of testing the strength of ordinary and this patent glass by means of a steel weight, cartridge-shaped and tempered, dropping from different heights. Best English plate glass broke beneath a two-pound weight falling 15 inches, while the La Bastie glass of an equal thickness was only broken by the same ball falling 4 feet 5 inches. The La Bastie plate glass was broken by a four-ounce ball dropped from a height of one foot, while the tempered glass resisted the same dimensions until it had been raised to 3 feet 9 inches. A one-pound weight required to be raised 3 feet to break a piece of this wonderful glass 4 feet 5 inches thick. To demonstrate the advantage of using this substance in roofs of houses, a plate was placed in a slanting position and a two-ounce ball allowed to fall upon it perpendicularly, as hailstones strike upon slanting roofs, and it was not until the ball fell from a height of 9 feet and had struck the same spot thirty-six times that it was broken, while common glass of twice the thickness was demolished at 4 feet. The next experiment consisted in allowing a strip of the glass 3 inches wide and 3-16 of an inch thick to project from a rise 6 inches. The Professor placed weights upon the projecting end. In this position it supported forty-four pounds, while ordinary glass of the same dimensions sustained but 16 pounds. The next experiment failed. A strip of the patent glass 10 inches in length, 3 inches wide and 3-16 of an inch thick, was bridged upon two uprights, and weights suspended from it in the center. One hundred and eighty pounds were thus suspended, when the glass still remained unbroken, with no signs of its giving way, and there being no more weights on hand the experiment had to be abandoned. Many similar experiments were tried, all with great success. Glass dishes were heated and cooled, without injury, and one plate was exhibited which had been abandoned. Many similar experiments were tried, all with great success. Glass dishes were heated and cooled, without injury, and one plate was exhibited which had been abandoned. Many similar experiments were tried, all with great success. Glass dishes were heated and cooled, without injury, and one plate was exhibited which had been abandoned.

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