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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated: correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7686) J. A. M. says: Will you give me a formula for the prevention of mildewing of cloth exposed to the weather? A. Dissolve 1 pound zinc sulphate in 40 gallons water, and then add 1 pound sal soda. When dissolved, 2 ounces tartaric acid are added. This holds the partially separated zinc carbonate without neutralizing the excess of alkali used. The cloth should be soaked in this solution for twenty-four hours and then dried without wringing.

(7687) E. C. L. M. asks: 1. What are the phenomena of the so-called "cloud burst"? A. A cloud burst is a thunder shower with so excessive a fall of rain that it seems as if the cloud itself was falling to the earth. They are thought to be due to the overturning of a mass of air which is in unstable equilibrium. They are very limited in extent, and last for a short time only. Little streams are swollen to rivers, and rush down the valleys, carrying soil, trees and even large bowlders with them and leaving desolation behind them in their track. The term originated in the Western United States, but its use has extended to the East, and is now used to describe any storm of more than usual severity. 2. Why does one perspire more when sleeping in a hot room (as we have here) than when sitting awake? A. We cannot answer this inquiry with any positiveness; but would suggest as a possible cause of the difference that when awake we are continually in motion, and therefore changing the air which is in contact with the surface of the body. The effect of this is like fanning or the use of the punka. But when asleep, the air lies motionless upon us, and is soon saturated with moisture, thus adding to our discomfort.

(7688) I. A. McC. writes: I would be glad if you would answer through Notes and Queries the question of what the pressure is in the modern gas engine at the instant of explosion under the most favorable circumstances. I asked the question of a manufacturer of gas engines who is rapidly coming into prominence in this portion of the country, and his answer was that under the most favorable circumstances the pressure was very close to 300 pounds per square inch. This is much more than I had ever heard it stated before, some parties giving it as low as 60 pounds. I have read no authorities on this question, but consider that 300 is rather extravagant and do not know whether the smaller figure is as extravagant as the other or not, but would think it a little too small. Another question I would like to understand is: What is the expansion of 74 degree gasoline measured in volumes when converted into gas at a pressure of one ounce per square inch? Also what is considered the best proportion of such gas and air for the most effective explosion? A. The explosive force in gas and gasoline engines varies with the charge compression. This may be from 30 to 80 pounds according to the volume of the combustion chamber or clearance adopted by the builder in the design of the engine. A low compression charge may give an explosive pressure of from 80 to 125 pounds per square inch; while a high compressive charge may raise the explosive pressure to from 150 to 250 pounds and possibly 300 pounds. Thousands of explosive motors are running at from 150 to 175 pounds maximum pressure. The vapor of gasoline is equal to 130 volumes of the liquid without admixture of air. The vapor and air mixture for highest explosive effect is one of vapor to six of air. The mixture continues explosive up to one part of vapor to ten parts air with economical effect.

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JULY 4, 1899.

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Inside Page, each insertion, - 75 cents a line
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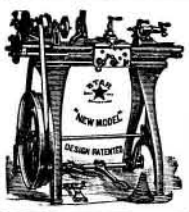
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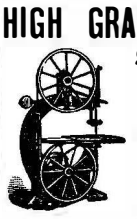
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