

them being known. Assume the distance $PQ = 1000$. Then with the angles at PQ known, it will be easy to find what XY will be equal to when $PQ = 1000$. Then state: As the length of XY thus found is to 1000, so is the given length of XY to the true length of PQ .

(2) As the greater force is 10 pounds and the resultant 6 pounds, the other force must be 4 pounds.

$$6 \times 8 = 4 \times X$$

$$X = 12$$

The other answer does not represent a state of equilibrium, and is therefore wrong.

(3) Let ABC represent the triangle of forces, AC the force of the stream, AB the tension on the rope making an angle of 45° with AC , and BC the tension of the rope making an angle of 30° . On AC let fall the perpendicular BD . Then if BD is assumed equal to 1, AB will be $\sqrt{2}$ and $BC = 2$. The ratio of forces therefore is $\sqrt{2} : 2$.

(4) Let M and N be the lengths of the medians, and Z the given angle.

Draw $DB = M$, and bisect DB in E . On EB draw a segment of a circle containing an angle equal to Z . Mark off $DG =$ one-third of DB .

From the centre G , with radius equal to one-third of N , cut the first circle in F . Join FG and produce it to C , making $GC = 2 GF$. Join CD and BF , and produce them to meet at A . Then ABC shall be the required triangle.

$DG = \frac{1}{3} DB$, and $DE = \frac{1}{2} DB$. Therefore $GE = \frac{1}{6} DB$, $DG = 2 GE$, and $CG = 2 GF$. Therefore FE is parallel to CA , and angle $CAB =$ angle $EFB =$ angle Z . And since EF is parallel to AC , and E is the middle point of BD , therefore F is the middle point of AB , and $AD = DC$, for each is double of FE .

One teacher writes: "We find that Mr. Brittain's Nature Lessons in the REVIEW are suggestive and helpful, but they call for a good deal of study on the part of the teacher as well as from the pupil." That is exactly the object that Mr. Brittain has in view in writing them. If he should tell the teacher, the teacher might tell the pupil; and that would not be teaching.

A Nova Scotian teacher offers a good suggestion: That the teachers who have made a specialty of agriculture and nature-study be allowed to visit several schools weekly, as the teacher of manual training now does, and teach one or two lessons in nature work and the sciences. Good results would certainly follow such a division of labor.

TRUEMANVILLE, P. Q.—This is a sample of wheat which has come to Nova Scotia from Southern California. The grains

are being eaten by small, dark-colored, narrow beetles, about one-eighth of an inch in length, with their heads prolonged into a slender snout. What are they? Are they dangerous if allowed to spread? How should they be treated? Please answer in REVIEW, or otherwise.

It is a beetle, one of the *Coleoptera*, family *Rhyncophora* (snout-bearing beetles), or Weevils. This species is the Common Granary Weevil (*Calandra granaria*). It is very destructive to wheat in bins, and has caused the loss of many thousand dollars' worth of grain. If freely exposed to a temperature about zero for a few days, the beetle is killed. The best remedy is that vile smelling, most volatile liquid, bisulphide of carbon. The bin should be tight. One and a half pounds of carbon bisulphide will suffice for a ton under these circumstances. The liquid rapidly changes into a gas, a little heavier than air, and permeates every part of the bin, which should be carefully covered, and kills the beetle. If the weather is warm, so that the eggs hatch, the treatment should be repeated a few weeks later. The odor does not adhere to the grain. The gas is extremely explosive, so that no fire can be safely brought near any point to which the gas may reach.

What was Queen Victoria's family surname?

A valued correspondent writes: Your brief but excellent answer to the above question in your February number suggests a few other thoughts on that continually recurring subject. The question seems to imply that every person must have a fixed and legal family name, which is not true. Fixed family names did not come into general use in England until about the beginning of the sixteenth century; and the custom is not yet fully established in some of the countries of Europe. In Norway, for instance, Peter, whose father's name is Hans, may be called Peter Hanssen; his sons, Olaf and Lars, being known as Olaf Petersen and Lars Petersen, and his grandsons taking as their personal surnames Olafsen and Larsen. The famous Norwegian poetess, who died in 1716, Dorthé, daughter of Engelbrecht, dean of the cathedral of Bergen, had no family name. Although the widow of a famous writer, Ambrosius Hardenbech, she was known only by her baptismal name, with the addition of that of her father, Dorthé Engelbrechtsdatter. A similar use of surnames, (surnames) formerly prevailed in England; varied, often in the case of the same person, by such other surnames (not surnames), as Baker, Smith, Steward, etc., denoting trade or occupation; Milton, Kirby, etc., derived from localities; or names descriptive of some personal peculiarity, or some sign or emblem by which the person or his residence might be distinguished. These names gradually became fixed as family names. In Scotland, the