

sphere most, then a cylinder of equal height and breadth; but as we elongate it, and make its form sausage-like, we begin to lose paper. If the parcel *must* have the corners sanctioned by time and grocers, let the cubic form be adhered to as making the most of a bag.

Our readers may smile at this, and call it ultra-economy; but it is not, for the wrapping-paper business amounts to millions a year, and prevalent shapes of retail parcels are very wasteful of covering. Besides, this law prevails not only in paper, but in the vast domain of packing-boxes, jars, bottles, cans, and kegs; and what political economist can calculate the saving possible to a geometrical regard to the laws which show how most bulk can have least surface?

We commend this subject to the attention of the men of cans and crocks, who, when the frosts of winter have succeeded to the fertilities and abundances of summer, are wont to regale us with the luscious peach, the genial tomato, and the nutritious lobster. Let them know that the nearer the height and breadth of a can, the less tin does it demand for its construction, and they shall live to bless Euclid and us.

The bakers of crackers should know that when their goods take a circular form, their loss in space and as bulk in cargo is 20 per cent.—21.46 per cent exactly, say 20 per cent. This loss is shared by all the shippers of round packages, whether tins or jars, candles, or pill boxes.

The larger a given heated body, the less surface there is for radiation. Steam coils for heating houses exemplify this by their slender dimension, which give a large radiating surface in little bulk. The extreme voracity of the insect plagues which infest our farms and orchards is explained on the same principle; being very small, they expose a very large surface proportionately for cooling, and they keep up the needed temperature by constant feeding, so the smaller a bug or fly, the more ought the farmer to dread a pound of him.

Astronomy has revealed to us countless planets larger than our own, and the small size of our world has led to disparaging comparisons. We have been told, for instance, that Jupiter's bulk is about 1,000 times as much. This indeed pigmies us, and would lead us to call this pellet, only 8,000 miles or so through, something else than universe. Let us qualify all this a little by the consideration that, as the surface of a planet is about all its people use, the smaller a planet is, the larger does it accommodate; so had big, boastful Jupiter been filled out into globes of our size, ten times as many creatures might have lived thereon.

Following the general law, similar cones are to each other as the cube of their like dimensions. Thus, a cone two feet high contains eight times as much matter as a like one of one foot high. Wedges with edges of a constant length are to each other, when similar, as the squares of their height or breadth. And here we have a method of balancing a force like magnetism, which increases through its length as the square. An immersed wedge, as heavy as the liquid of immersion, with apex up, is the *desideratum*.

In the two cases of cone and wedge, we think the calculating machine is to be helped. If a cone, apex downward, be immersed in a liquid placed in a graduated cylinder, the displacement of the liquid shall be as the cube of the depth of immersion; so with a wedge, it shall be as the square. This hints at how squares and cubes of numbers may be found, and how square and cube roots may be found by a reversal; cylinder, cone, and wedge being graduated.

We finish, commending these few suggestions to all who have hitherto thought geometry a dry and unfruitful study, with the hope that their Euclids shall be turned over to good account.—*American Artisan*.

The Educational Uses of a Newspaper.

The majority of persons who subscribe to a newspaper regard it in too narrow a point of view. They regard it as a gossiping visitor, who affords amusement or instruction to themselves. This it is, of course. But it may fulfil a more important office in a household. It may become a powerful auxiliary in the intellectual improvement of the young. The boy who reads aloud a good newspaper for the elder members of the family cannot fail to be advanced and elevated by his occupation. Such an exercise will gradually wean him from the puerilities, follies and toys of childhood. It will fill his mind with varied, curious, useful and solid knowledge. It will educate him unconsciously. It will, to use a vulgar phrase, make a man of him. This might be demonstrated by the example of America. One of the reasons why young Americans are so intelligent, so enterprising, so "wide awake," is that in their boyhood their mental aliment consisted in a great degree of newspapers. Schoolboys in America not only read, they sometimes write newspapers. In consequence of this the young, keen eyed American is not only abreast of contemporary events, but he projects his mind into the future. He makes "the time come to his own." All that wonderful variety of curious invention which characterizes America may be attributed in some degree to the precocity produced by newspaper reading. It has often been remarked that if England rule the sea, if France or Prussia rule the land, the future is the dominion of America. The newspaper leads their young men, as it were, to the bright horizon of human knowledge, where, like the Arcadians pursuing the sun, they stand aloft and contemplate the golden effulgence, when, lost to other eyes, it illuminates the enchanted regions of the untrodden future. They do not think of what their country has been, but what it will be. They anticipate the time when America will be as populous as China, as military as Prussia, as maritime as England, as powerful as pagan Rome in the plenitude of its imperial domination. They not only do this, they endeavour to make their own country what they imagine.

The youth of America are, generally speaking, able to discuss the important questions which agitate the minds of the greatest statesmen. In reading the eulogies of eminent men, which so often occur in the newspapers, a spark is sometimes struck, a flame kindled, a love of fame engendered, which animates them through life to struggle for a prominent position in society. There is no description of literature which excites so much attention in the old (and consequently makes so great an impression on the young) as a good newspaper. The pinions of the intellect wax strong in the perusal, and become capable of a wide range of profitable excursion in the world of inquiry. To read a modern newspaper requires a great amount of information. Without a knowledge of geography, for instance, a newspaper is unintelligible. No boy who understands a newspaper can grow up a dolt, a mope, a child-man. He must be capable of conversation on the greatest subjects of popular discussion. In short, the father who refuses or fails, for the sake of a paltry expenditure, to introduce a newspaper into his household, deprives his children of a great intellectual inheritance. He inflicts an irreparable injury on his offspring.

(*Leinster (Ireland) Independent*).

Canadian History.

THE GOVERNORS AFTER CHAMPLAIN.

The valiant and faithful Champlain being dead, other Governors, from time to time, were sent out by "The Company of Associates" to rule the colony. Of these Governors, up to the year 1663, a list is given here. They were all old officers, pious and brave, who had served in the armies of the king of France.

Every new Governor brought with him a few soldiers. The priests, people of the colony, and Indians, used to receive him as if he were the king himself, landing on the low ground underneath Cape Diamond and Fort St. Louis. Guns were fired and the keys of the Fort