

804,000, as compared with hundreds of miles of street car rails in Chicago to about the same or less amount of population, he either stifles some of the facts or betrays his ignorance of the subject, in some respects, at least.

For instance, he neglects to mention that Glasgow has miles of underground railroad with trains running to every part, almost of the city, every few minutes. In one part there is an outer circle and an inner circle where a train runs continuously both ways all the time; not only that but no account is taken of the splendid system of river steamers called the "Cluthas," also owned by the municipality, which carry thousands of passengers up and down the Clyde. These also run every five or ten minutes. This does not include all the means of transportation, for on some of the busiest routes there is a line of omnibuses, and it is well known that the cheap fares permit of hundreds to use cabs and carriages.

Just a word, as to the fares, etc.; it is a well known fact that prior to the corporation of the city of Glasgow, taking over the lines and plant, the servants of the street car company were treated in a shameful manner. Space will not permit me to go into the details, but I venture to assert that if all the street car employees were asked today whether they would prefer to work under the old rather than the new conditions, a universal "No" would be the reply. The fares are lower than ever and the fact that the city made such a large profit over the actual expenses of running, where 1 cents fares are in existence for stipulated distances is an argument Mr. Proctor cannot overcome. In conclusion, let me state, that the "city fathers" of Glasgow are not in the business to make big dividends but to treat the people well, pay better wages and work their employees less hours than private corporations do in the other cities.

Yours truly,

WILLIAM SERVICE.

RECENT DISCOVERIES IN SCIENCE.

The production of liquid air on a commercial scale has brought out some interesting applications, one of these being the use of the material as an explosive. In the slow evaporation of the liquid in open air, the nitrogen escapes first, so that a high proportion of oxygen may be readily obtained, and when this reaches 40 or 50 per cent the liquid forms with charcoal an explosive comparable to dynamite in power, and, like dynamite, capable of being exploded by a detonator. The mixture has been tested in a coal mine near Munich with fair results. The explosive is not expensive, but, as it must be used within a few minutes after being produced, it is not expected to come into use except in blasting on a large scale, as in cutting an Alpine tunnel. The discovery suggests the idea that plants for making explosives as needed might be better for warships than great powder magazines.

The by-products of blast furnaces in Scotland are now being generally utilized, their recovery having proven a profitable industry. Figures given by Mr. A. H. Sexton show that from four furnaces consuming 2,000 tons of coal per week with a production of 1,400 tons of pig iron, there are recovered weekly 100 tons of pitch, 20,000 gallons of oil, and 20½ tons of sulphate of ammonia. The aggregate value is £470. The expense in wages and acid used is placed at £50½, and in interest on a £10,000 plant at £38, leaving a handsome balance for depreciation and profit.

Dental caries, Prof. Wintler affirms, may be reduced one-half by medicines taken internally, creosote, being an

effective preventive. Much decay may be avoided by cleanliness of mouth and teeth, and the use of magnesia—especially at night—when acidity prevails.

The disagreeable odor often acquired by water in open reservoirs has been lately shown to be due in many cases to vegetable growths, and not always, as has been supposed, to decomposing organic matter. Various minute plants are now known to impart both unpleasant odor and taste to such water.

Fires play a considerable part in forest development. The great forest fires of Canada, according to Dr. Bell, are mostly set by lightning, and occurred even in the Pleistocene epoch of geology. Recently burned portions of the great forest between Alaska and the Straits of Belle Isle are marked by a tender green. Woods of resinous pine are consumed fastest, fallen branches and dead leaves burning like tinder, and the flames rise nearly 200 feet while rushing along at race-horse speed. One fire spread 160 miles in ten hours. Birds and beasts are destroyed, the amphibious creatures like beavers and muskrats alone having a chance of escape. The traces of a fire remain nearly a century. After 15 or 20 years the ground is covered with poplars, willows, etc., which shelter young firs and other trees, but in 50 years the conifers are out beneath the pines. Some pines would hardly be produced without the fire, which sets free the seeds. Alaska's forest may be divided into thirds, of which one-third is 50 years old, the second between 50 and 100, and the third over 100.

A paving brick, said to be equal to granite, while having the advantage of regular shape, is now being made in Eisleben, Thuringia, from copper slag. As sudden cooling of the material forms the slag is run in from the smelting furnace, and annealing is affected by thickly covering the filled moulds with sand and allowing them to stand 72 hours or more. The moulds are of iron, each having a capacity of 36 bricks.

Was Mathus right? He held that population tends to increase more rapidly than its wants can be supplied if not checked by war, famine or other dire calamity, and it is suggested that the present universal unrest and war-craving may be an instinctive consequence of unchecked multiplication of the race during long peace. Anti-Malthusian, however, appears the more evident theory that over-production of life's necessities has turned human activities into any new fields that open.

Non-inflammable artificial silk is produced by a German chemist by using, instead of the usual nitrated cellulose, a solution of purified cellulose in sulphophosphoric acid.

There are virtues in blood-letting of which the unscientific practitioner of old knew nothing, if we may accept the conclusions of a Russian physiologist named Essipor. This experimenter believes he has proven that profuse bleeding changes the composition and properties of the blood remaining, giving it a bactericidal action. Loss of blood equal to about a fortieth of the body weight gave rabbits, pigeons and guinea pigs a marked resistance to infection by bacteria, and especial protection against the microbe of cholera. The effect seemed to be produced gradually, reaching a maximum in about twenty-four hours.

How to preserve yeast for a considerable time has been a difficult but important problem. It is itself destroyed by antiseptics, but the extraordinary tenacity of life among certain micro organisms when dried has suggested to a German chemist the plan of desiccation, and he has now demonstrated that the yeast can be kept in this way without loss of vitality for at

least a year. The yeast cake is first made into pellets the size of a pea. These pellets are partially dried in air, then sifted over with pulverized potato starch and thoroughly dried in a rotating cylinder, heated moderately but not enough to injure the yeast, and are finally placed in air-tight jars.

Snow statues are the achievement of a French sculptor—Pierre Roche—through scientific means. Within the statue, which is of copper, is placed a vessel containing liquified carbonic acid, whose slow evaporation generates great cold and condenses the moisture of the air in a snow-like coating on the outer surface of the figure. This covering remains as long as the refrigeration is continued.

Cultures of the typhoid bacillus have been found by Dr. Edward Germano to retain their vitality for sixty days in warm moist air, although killed within twenty-four hours in dry air. He concludes that transmission of the disease by winds from infected districts is highly improbable, but that it may be conveyed long distances in blankets and woolen clothing that have been imperfectly dried and disinfected.

The St. Bernard oak at Cusin, France, was planted in 1070. Its trunk is hollow and twenty-two feet in circumference.

IT IS NOT RIGHT

To take off heavy underclothing when you have become overheated.

To think that the more a person eats the healthier and stronger he will become.

To believe that children can do as much work as grown people, and that the more they study the more they will learn.

To imagine that if a little work or exercise is good, violent or prolonged exercise is better.

To eat as if you had only a minute in which to finish the meal, or to eat without an appetite, or to continue after it has been satisfied to gratify the taste.

PASSING THOUGHTS

Pleasure soon palls when it costs nothing.

Friendship may soon die, but enmity never.

A shaggy camel may bear a smooth burden.

All men are fools, but only the wise stop being so.

Knowledge puffs up. Wisdom lets the wind out.

When you have nothing to do, never go after help.

When a man begins to discuss matrimony with a widow the result is usually a tie.

The Cheyenne Sun-Leader says that reports reached Rock Springs Monday of the killing of C. J. Dowd, a ranchman living on Sheep creek, near the Utah-Wyoming line, by his partner, a man named Reiser. The two were working together in a blacksmith shop and quarreled over a trifling matter in their work. Dowd said: "I have a good notion to kill the whole outfit of you," referring to Reiser and his family. With the threat he drew his pistol and fired at Reiser. The first bullet missed, but the second inflicted a slight wound. Reiser then struck Dowd with a hatchet and took his pistol. Dowd grasped a knife and rushed at Reiser, who shot as he advanced, the ball striking Dowd in the forehead, killing him instantly. The affair took place across the Utah line, and Reiser immediately surrendered himself to the authorities of that State.