

on each side, affording at the same time ventilation, light, and a good view of passing objects. This room is tastefully decorated, showing the hand of an artist in all its points. The paneling is of highly polished satin wood, surrounded with beautifully carved beading of green and gold, and on each side of the windows the sameness is relieved by white pillars, with carved capitals of gold. The cornices are also of green and gold, and the ceiling, and the casing of the masts, are ornamented in a similar style of elegance. The aft part of the saloon is furnished with six elegant mirrors, and two on each side of the entrance door of large dimensions let into the panels, as are all the mirrors throughout the vessels. * * * On the orlop deck she can stow about 1000 tons of goods, besides having a tank capable of containing a thousand gallons of water.

The other pieces in this number are Brick and Cement beam experiments, illustrated; Colne's improvements in Glass Cutting Machinery, illustrated; and a further description of the manufacture of flax. The February number contains a very neatly engraved design of Davies's Rotary Engine, with a very full description, illustrated; Hill's improvements in Malleable Iron Railway Chairs; with a continuation of Flax, and its manufacturing machinery, and a variety of other useful experiments. The desire which the publishers of this very ably conducted practical and scientific journal have evinced, to keep pace with the progressive spirit of the age; not only by furnishing the most recent improvements, but in producing them in the most appreciable form, will, we trust, meet with the warmest and most hearty co-operation from artisans of all classes.

THE DIVING BELL.—OR PEARLS TO BE SOUGHT FOR: By Uncle Frank; Boston, Phillips, Sampson & Co.; Toronto, A. H. Armour & Co.

This is one of Phillips and Sampson's juvenile treasures. It is printed in a clear bold type, very tastefully got up, and embellished with a variety of beautifully tinted pictorial illustrations. It is written in an easy pleasing style, well calculated to rivet the attention of youth; while the sound moral precepts it inculcates, are happily fitted to leave a lasting impression on the young mind. The name gives no direct indication of its subject matter, as it is used in a metaphorical sense, to represent that, as the Diving Bell is used sometimes to aid in the search for pearls, so may this book be used in the search for pearls of an inestimable value.

Agriculture.

FUNGI—AS A PARASITE.

(Concluded from our last.)

The pests attacking wheat plants, &c., include four different genera, all worthy the attention of the tiller of the soil. The cereal parasites, which are extremely minute, having their mycelium present in healthy plants, generally appearing in patches of different colors, commonly deep yellow, brown or black, growing on the leaves or raising the epidermis (skin) into curious puffy blisters. The *dipasca*, quite common, makes its appearance on the stem in their healthy state, may be noticed by carefully examining the joints. Whole fields of wheat have been seen blackened by its encroachments, farmers call it mildew, but botanists have found it to be a true parasite, and a very destructive one. This disease, in its infancy, shows itself beneath the epidermis of the stem, of an orange colored tinge, which, when magnified, appears to be a dense mass of pear-shaped fungi, with a stalk, into which each one gradually tapers.

All plants have *stomata*, or mouths, organs by which they exhale and inhale, and under the influence of light and dry weather, these organs are in active imbibition, but in wet and gloomy

weather their functions are reversed, and they inhale powerfully. Now, as I have before stated, that minute fungi are always present in the atmosphere, there can be no doubt that their location in the wheat stems must be their entering the *stomata* during the time its pores are open for the purpose of inhaling its natural supply of moisture, being exhausted by the heat of the preceding day. Pores, or mouths, similar to these are placed by nature on the surface of leaves, branches, and stems of all perfect plants." This shows a beautiful provision in nature, compensating for the want of locomotion in vegetables, for a plant cannot, when thirsty, go to the brook and drink, therefore, failing to receive nutriment, becomes shrivelled and defective, according to the number of parasites which are robbing it of its sustenance. Farmers are in error when using the name of mildew, upon the ear of wheat being attacked by a black dust-like appearance; although this dust is a fungus, it must not be confounded with *puccinia*. Its botanical name is the *dadosporium herbarum*, called so from the Greek word, (*klados*) meaning branch. This fungus is always incidental to some previous disease; where the soil is stiff, or boggy, and when winds have injured the crops, or the rain laid it on the ground, then the *cladosporium* seizes it. Observations, however, are not yet quite satisfactory as to the effects of soils upon this fungus; whether heavy soils are more favourable to it than light ones. Nor is it decided whether spring wheats are less liable to it than winter wheats. Much may be done in checking the injurious diffusion of these granivorous tribes. Mr. Edwin Sidney, an enterprising botanist recommends the following suggestions, well worthy the attention of the agriculturist:—

1. "To change the texture of soils by amendment, or by mixture, where fungi, or mildew has long obstinately prevailed. The farmer should learn that the mechanical state of his land is just as important as the chemical. Glass, which refuses to part with its alkalies when in a solid state, if brought into contact with water, parts with them easily when moistened, after being finely powdered in a mortar. Any person may convince himself of this fact, by laying a lump of wetted glass on turmeric paper. No result follows. Now reduce the same piece of glass to fine powder and wet it; the turmeric paper turns red, indicating that an alkali has been set free. Hence the fine mechanical division of the soil effected by judicious mixture of more friable materials, may produce great results in giving out organic compounds, whose tendency is to strengthen it against the attacks of disease."

2. A careful notice of many places where mildew has prevailed, will at once satisfy the observer that they have been so situated as to be subject to the evils of too much shade, or want of free circulation of air. Letting in more air and light in these localities, by obvious means, would be in such cases the best mode of proceeding."

3. Growing early varieties in places subject to the growth of fungi; also, avoiding manuring immediately before putting in the seed."

Great precautions should be taken in clearing the land from weeds; the author of the above, quotations says from experience that he has seldom, if ever, failed to meet with it in unclean lands." When drainage is good it will not be found to any alarming degree. Just as the clean skin of animals is a defence against noxious living parasites; so by an analogous method, the soil will be rendered free from the destruction of fungi.

Oriental Sayings.

AFRICAN JUSTICE.

Alexander the Great, in the course of his march to conquer the world, happened to come into a remote province of Africa, which abounded in gold; but whose inhabitants dwell in their peaceful tents,

far removed from the turmoil of the world, and who knew neither of war, nor of conquest.

When the Macedonian hero had arrived among them they conducted him to the tent of their aged chief, who received him with great kindness and cordiality, and immediately placed before his noble guest various kinds of fruit and bread, of solid and pure gold.—What! and do you eat gold here? asked Alexander, eagerly.—No, replied the old chief, but I imagined that of eatable food you might have found plenty in your own country. What then has brought you to this distant land?—I have not come hither enticed by your gold, replied Alexander, but I came to learn your manners. If such indeed is your desire, said the chief, be welcome, and remain with us as long as it may please thee.

Whilst they were yet speaking, there came two citizens to obtain judgment from the chief. The one said, I bought from this man, a short time ago a piece of land, and whilst I was digging it, I discovered a large treasure of immense value; it does not belong to me, for I only bought the piece of ground, and not the treasure that was concealed in it. I have repeatedly urged him to take it back, but he positively refuses to accept it. To this the other replied, I am also as conscientious as my neighbour, and fear equally to do evil, I sold him the piece of land, and all its contents, and hence the treasure justly belongs to him, and I can therefore not receive it again from his hand.

The chief having attentively listened to both parties, repeated their words, in order that he might be sure, that he had rightly understood them; then, after some little deliberation, said to the former, friend, methinks thou hast a son, hast thou not?—yes was the reply;—then turning to the latter he said, and thou hast a daughter, if I remember rightly? yes.—Well then! go let thy son marry his daughter, and give the treasure to the bridal pair, as a marriage gift, and let them be happy.—This is my decision.—Alexander stood amazed with a astonishment; not motionless, and with his face towards the ground. Have I judged wrongly, said the chief, at last that thou art so surprised? By no means, replied Alexander, but I am astonished. And why, how would the matter have been decided in your country? asked he eagerly.—To tell the truth replied Alexander, with us, both parties would have been cast into prison, or they would have lost their heads, and the treasure assigned for the King. For the King? repeated the chief, and clasping his hands together, looking at the same time sternly at his noble guest. And does then the sun shine in your country?—O yes! and does it also rain there? by all means.—Strange! Wonderful! And have you animals, and fowls in your land? Plenty of all kinds.—Then no doubt, exclaimed the aged chief; the Almighty Being, causes the sun to shine, and the rain to descend from the heaven, for the sake of these innocent animals, as for such men, they deserve it not.

R.

Miscellaneous.

RAPIDITY OF THOUGHT IN DREAMING.

A remarkable circumstance, and an important point of analogy, is to be found in the extreme rapidity with which the mental operations are formed, or rather with which the material changes on which the ideas depend, are excited in the hemispherical ganglia. We would appear as if a whole series of acts, that would really occupy a long lapse of time, pass ideally through the mind in one instant. We have in dreams no true perception of the lapse of time—a strange property of mind! for if such be almost its property when entered into the eternal disembodied state, time will appear to us eternity.* The relations of space as well as of time are also annihilated, so that while almost an eternity is compressed into a moment; infinite space is traversed more swiftly than by real thought. There are numerous illustrations of that principle on record. A gentleman dreams that he had enlisted as a soldier, joined his regiment, deserted, was appre-