

think ower muckle o' the Tammany party, I can tell ye that, but when it comes tae pickin' a winner they ken what they're about. An' if ye want proof o' it I hae only tae tell ye that their candidate, John F. Hylan, oor boy that started oot by payin' off the five-hundred-dollar mortgage on his feyther's farm, wis elected by the biggest plurality ever given tae any man that has tried for the job o' bein mayor o' the city that thinks it'sel' aboot the greatest combination o' money an' brains that has yet happened on the face o' this auld earth.

I mind o' askin' a tramp, one time, how a healthy lookin' chap like him came tae be beggin'. "Oh, I didna' hae any chance," says he, "Nobody ever helped me tae get a start."

World Benefactors.

Louis Pasteur.

We live in a time of great deeds. Devotion to country is universal. Acts of heroism are being performed on every hand and by all peoples. Humans of many climes are laying down their lives that the progress we have made in literature, art, science, and most of all, in freedom of thought and action may not be wiped out or buried for a hundred years beneath the burden of a Prussian dominance. On the other hand, mislaid millions are sacrificing all they have—life, husbands, sons, brothers, fathers—in a cause which, God grant, will soon be revealed to them as nothing short of a vicious and ambitious Hohenzollern desire. After the war is over—the carnage ended—let us not forget those great minds which through the ages have been working in the interests of a peace-loving humanity, but whose discoveries have, nevertheless, brought comfort and alleviation of pain where the wounds of battle are being inflicted by a world gone mad.

When we realize that,—

"Titles are shadows, crowns are empty things;
The good of subjects is the end of Kings."

then will dawn upon a thinking people a greater appreciation of the life and work of Louis Pasteur, the subject of this short article. In the sick room, in the laboratory, in the factory, and on the farm, we are benefiting day after day by the ceaseless energy and wonderful discoveries of a mind consecrated to the good of mankind. Louis Pasteur was the antithesis of strife or conflict. Modest and simple minded, he labored on, seeking truth in nature and science, that his countrymen and the peoples of all nations might inherit something that would do them good. "There is no greater charm," said Pasteur, "for the investigator than to make new discoveries; but his pleasure is heightened when he sees that they have a direct application to practical life."

This great French chemist was born on December 27, 1822, at Dôle, Franche-Comté, where his father conducted a tanning business. Gradually, step by step, and after much hard work, for he was considered only an ordinary student, the youthful Pasteur obtained his diplomas which admitted him to the École Normale at Paris. Strangely enough, a note was attached to his final diploma (probably by an examiner) stating that he was only "mediocre" in chemistry, but time has shown him to be one of the world's great men of that profession. He began as an assistant in the chemical laboratory of the famous college he had entered, but it was not long before he had revealed certain truths (by improved research method) that had baffled the leading chemists and physicists of his time. He was then made Professor of Chemistry at the Faculty of Science at Strasbourg. He subsequently accepted a more responsible position of like character at Lille, where he developed to be the acknowledged head of the chemical profession, and from which station he was elevated to a dignified and honorable post in the École Normale in Paris.

The name of Pasteur has been made immortal through the adaptation of his scientific discoveries to ordinary life and industry. When a mother heats milk at a low temperature to make it safe for her child, she pasteurizes it, or destroys germ life, which this famous scientist proved to be the forerunner of disease. The dairymen, too, must thank Pasteur for the method of preserving milk and milk products from the ravages of bacteria or destructive organisms. It remained for him to demonstrate the causes of the various fermentations such as vinous, where alcohol is produced; acetous, where vinegar is the result, and in the lactic, where milk turns sour. Certain claims in regard to these organisms had been made, but Pasteur reduced the theories to reality and adapted the discovery to industrial possibilities. In June, 1865, he undertook to explain the cause of the epidemic of a fatal character which threatened to ruin the silk industry of France. Up to that time he had never seen a silk worm, but by September of the same year he was able to announce results that pointed to immunity from the dreaded plague. He then turned his attention to diseases of animal life, and, cognizant of the fact that malady in many cases is due to germs or bacteria, he set about to produce immunity by inoculation with a weakened or attenuated virus produced by the culture of the specific organism. The first disease investigated by Pasteur was chicken cholera, an epidemic which destroyed ten per cent. of the French fowls. He was able to reduce the death rate to one per cent. by his inoculation or immunization method. The fatal cattle scourge, known as Anthrax, next claimed his attention, and by inoculation he was able to reduce losses in the French herds from ten to less than one per cent.; a saving which the famous Huxley said was

sufficient to cover the whole cost of the war indemnity paid by France to Germany in 1870. Most interesting of all was his gift to the world symbolized in the Pasteur Institute, where Hydrophobia in men and rabies in animals is brought under control. Not only was he able to render immunity by inoculating with the attenuated or weakened virus, but by the same method he could produce remedial effects in a patient in whom the disease was developing. Thus it was that the most dreaded of human afflictions was conquered by a scientific mind consecrated to public weal. Pasteur Institutes sprang up in all countries, and still stand as a monument to a great man whose name will live when kings and princes are forgotten. The keynote of his life was sounded in the closing words of his oration at the opening of the Pasteur Institute in Paris, on the 14th of November, 1888, which were as follows:

"Two opposing laws seem to me now in contest. The one, a law of blood and death, opening out each day new modes of destruction, forces nations to be always ready for the battle. The other, a law of peace, work and health, whose only aim is to deliver man from the calamities which beset him. The one seeks violent conquests, the other the relief of mankind. The one places a single life above all victories, the other sacrifices hundreds of thousands of lives to the ambition of a single individual. The law of which we are the instruments strives even through the carnage to cure the wounds due to the law of war. Treatment by our antiseptic methods may preserve the lives of thousands of soldiers. Which of these two laws will prevail, God only knows. But of this we may be sure, that science, in obeying the law of humanity, will always labor to enlarge the frontiers of life."

Honored and revered, Louis Pasteur passed away at St. Cloud, September 28, 1895; simple-minded and affectionate as a child, he won distinction by diverting his labors and brilliant intellect to a useful end and giving to humanity a heritage which has made his name immortal.

Nature's Diary.

A. B. KLUGH, M.A.

Canada From Ocean to Ocean.—II.

If we visit a stretch of rocky shore on our Atlantic coast at low tide there are certain forms of life which are sure to attract our attention. Of these one of the most noticeable is the Starfish. We shall probably come across several species of Starfishes, differing in the number of rays or arms, in size and in color, but the most abundant, and most characteristic of the shores of the Maritime Provinces, is the Common Atlantic Starfish, (Fig. 1).



Fig. 1—Starfish.



Fig. 2—Barnacle.



Fig. 3—Shell of Polynices.



Fig. 4—Shell of Whelk.



Fig. 5—Limpet, side view.



Fig. 6—Rock Crab.

The Starfish are peculiar in many respects, differing widely in their structure and habits from the great majority of other animals. In the grooves along the under surface of their rays they have rows of "feet," which can be extended and contracted at will, and it is by extending and attaching some of these feet, and then shortening them that the Starfish creeps slowly along the bottom. In feeding most animals take food

into their stomachs, but the starfish turns its stomach inside out through its mouth, wraps it around its prey and in this manner digests it.

The Sea-Urchins, which belong to the same group as the Starfish, are usually common in the crevices of rocky ledges. The best description one can give of them is an animal shaped like a door-knob and covered with long, stiff spines. The commonest species, which has no particular common name, is green in color and about three inches across.

Nearly everywhere along the coast where the rocks are not covered with sea-weed we see the white, cone-shaped, tightly-attached Barnacles. In our illustration, Fig. 2, we show a single individual, viewed from the side, but they occur in large groups, often covering areas of considerable size. These Barnacles look much like shell-fish, but as a matter of fact they belong to the same group as the Crabs, Lobsters, etc., and in their early stages are free-swimming. Then they settle down, secrete their shell, which is composed of several plates, and live by waving minute organisms into their mouth with their curled, feathery feet, which may be seen projecting from the top of the shell in our cut.

One of the very common animals between the tide-marks is a Snail known as Polynices, by which name we have perforce to call it since it has no common name. This Snail, which is from three to four inches in diameter, feeds upon clams and other Mollusca, drilling a clean, round hole in their shells with its rasp-like tongue and sucking out the soft contents. Another very common Mollusc is the Whelk, the shell of which attains a length of three inches. This species also occurs on the coasts of the British Isles, where it is used as food. On our coast the animal is often extracted and used as bait on the trawl lines.

A very characteristic shell-fish is the Limpet, Fig. 5. The expression to "stick tight as a Limpet" gains a new significance when we try to pull one of these molluscs off a rock. It is, in fact, practically impossible to pry them off, uninjured, with a knife-blade, unless the blade is slipped quickly under the edge of the shell before the animal has time to clamp it down. When the tide is in the Limpets wander over the rock in search of food, but before low tide they return to their original resting places.

In many places along the coast the Rock Crab is a common animal. This species, like all true Crabs is broader than long, and travels sideways. The Rock Crab rarely occurs high up on the shore but is usually found about low-tide mark.

There are, as we have already stated, hundreds of different species of animals to be found between the tide marks on our Atlantic Coast, but those which we have mentioned are the commonest and most characteristic.

(To be continued).

THE HORSE.

Diseases of the Feet—VII.

Foot Punctures—Pricks in Shoeing.

A "gathered nail" may pierce any part of the sole or frog, but is probably most frequently found in one of the commissures of the frog (the hollow between the frog and the bar on each side). If the seat of puncture in one of the commissures about half way between the heel and the point of the frog, and be deep, there is danger of the nail having penetrated the bursa of the navicular joint. While punctures are generally caused by nails, many sharp objects, as glass, iron, wood, etc., may cause them. The symptoms usually are well marked. The horse suddenly goes lame in many cases, practically progressing on three legs, but in some cases the lameness is slight, and in some cases where the nail has not penetrated sufficiently deep to pierce the sensitive parts, no lameness is caused and no suspicion of the horse having "picked or gathered a nail" exists, until the groom discovers it the next morning when cleaning out the foot. This fact impresses upon our minds the advisability of cleaning out the feet and looking for nails, stones, etc., at each grooming. In a case such as stated, the presence of the nail would be detected, and its extraction would prevent trouble, while if not noticed and extracted there would be danger of it penetrating further if the animal stepped upon a stone or other hard substance, at the seat of puncture.

Treatment.—So soon as the horse is noticed going lame, the rider or driver should dismount and carefully examine the foot. In some cases the animal may have trodden upon a nail that was somewhat firmly fixed. He suddenly lifts the foot which pulls away from the nail, but he goes lame all the same. In such a case the examiner will, of course, not see the nail, and, on account of the elasticity of the horny sole there will be no hole to mark the seat of puncture, as the opening through the sole will have closed as soon as the foot was drawn away from the nail. In some cases there will be a few drops of blood to indicate the seat of trouble, but, where this is not the case the examiner is often at a loss to know definitely what caused the lameness. In these cases the horse may or may not continue to go lame at the time. When the nail in such cases has been clean, and has not penetrated sufficiently deep to draw blood, no untoward results are likely to follow, but if foreign matter has been left in the wound, or if blood has been drawn, lameness will very probably become more evident in a few days. When the nail or other foreign substance be present it must be extracted. This can sometimes be done by the fingers, but in many cases it is too firmly fixed, and a pincers or claw-hammer is necessary to remove it. If the