OOWN ON THE LINKS.

the links where the lark's on the ies and buttercups dot the green neath the glance of the players the links far away from the are playing with mashies and

the links they're addressing the full of Gaelic as Scotch caddies putters and drivers and niblicks the links dudish chappie and

the links the ball they are putis pronounced just as if it were s are wilted and faces are red— the links they have just mobbed d that golf was like plain Yankee

PENSATION-HER DAY.

mighty rolling river, a little, rippling rill; nountain naught could shiver, a tiny, shifting hill.

lion, loudly roaring, a lambkin, born to love; eagle, proudly soaring, a gentle, cooing dove.

sturdy oak, defiant,

e day when they went shopping, the one that took the lead; be earth, so far o'ertopping t he seemed a mustard seed.

LOVE'S PRODIGAL

(By Katherine Lynan.) were dead and gone, d never tell him never eart's love that like a river

im now my love, all not tire thereof desiring of new fashion tale in many a way.

ad and cold as stone know 'twould ease his grieving il measure of my giving that doth hold ek of gems or gold.

the miser giveth scanty ggared while we may.

t a pretty bonnet. ritic sat upon it, the sonnet, the bonnet) Nothing loath.

if it were high treason. either rhyme nor reason.
And its out of season?

emale imitation rthier creation a bonnet? This was hard.

re put together neatly, izing very sweetly, critic crushed completely, the bonnet

the sonnet, the sonnet, But the bard! —Buffalo Enquirer. me, madam," said the paying you have not indorsed this you will write your name on f it it will be all right."

course," said the little woman. gotten.' indorsed the check: "Sincere-Janette Hicksworthy.'

ther Seriously Interfered With the Sports.

IMO'S CELEBRATION.

May 25.-Yesterday mornvery unfavorably for the akers. Rain commenced to five o'clock, and when the unced to start the sports came ittee decided it would be to t of every one to postpone it, accordingly done until one n the afternoon the rain let r a time the sun shone out splendor, but the sunshine did ong, as it commenced to rain has continued ever since. so ports to-day promise to be a he principal event yesterday e reel contest. Nanaimo et test and the coupling conia winning the dry test.

It quickly oures

Corns, Chilblains Cracks between the Toes,

Scalds Swellings, ülcers. Stiff Joints, Old Sores Inflammation of all kinds, Lame Back, Pimples, Rheumatism, Pustules,

Caked Breasts, Eruptions, Diseased Tendons, Contracted Muscles, And all Lameness and Soreness.

gents for B. C

SYMBIOSIS

Or Mutual Help Between Animals and Plants.



ology a most interesting subject is to be found in the curious comradeship beween animals and known as Symbiosis or Mutualism. The more the

studied the wider does its range become, till the student wonders whether every higher organism, be it animal or plant, will not be found to depend at last rpon the auch maligned bacteria for their very existence. But of this wide extension of symbiosis I will speak later on, and will now describe some individual cases of mutual help and dependence.

Amongst those extraordinarily intelligent insects the ants instances of alliarces with plants are so common that a large number of these latter are known as the ant plants. Foremost amongst ant plants in its ingenious arrangements for protection is the "bull's horn" acacia of the forests of Central and tropical America. Here the leaf-cutting ants (OEcadoma) commit fearful havoc among trees, laboriously and persistently carrying off in their mouths, piece by piece, the foliage of trees and shrubs. have read accounts of the march of these ants; the traveller sees a long procession small pieces of green leaves carried aloft umbrella fashion in the pincers of these formidable ants, just in the fashion hat Malcolm's soldiers advanced trom Birnam Wood to Dunnsinane. But the bull's horn acacia rests in peace, for it has established a levoted garrison for ts protection. In its hollow thorns certain curious little ants (Pseudomyrn:1 tricolor) find a stronghold for themselves and their families; the entrance to their fortress is at the tip of the thorn, and at the base of the leaflets the obliging acacia has a gland full of honey for the food of its garrison. On the approach of any foe, whether it be a mammal on the lookout for a juicy morsel, or battalion of leaf-cutting ants, the little Pseudomyrmae rush out in fury and drive off the enemy.

The researches of a most painstaking German naturalist, Fritz Maller, have proved that the leaf-cutting auts in their turn present an extraordinary instance of symbiosis. They grow in their nests a species of fungus, which they protect tion of scavengers, and amongst these and literally feed with the most anxious the most amusing is the Clown-leech, care. The leaves these ants bring which has been thus described by Van home are bitten into small pieces and carefully chewed into round balls till every cell is crushed, and the vegetable matter thus reduced becomes fitted for food for the fungus. In a few homes Fritz Maller found these balls permeated main suspended there till the young are with the filaments (hypnae) of the fun hatched. In the midst of these eggs lives gus. The swollen part of these fila-ments becomes food for the ants. If the perhaps the most extraordinary looking fungus be removed, the ants, however being the zoologist's eye ever belield. Let plentifully supplied with leaves, die of us imagine a clown from the circus with weeding this peculiar garden, and so of one might even say literally boneless, disfectually do they work that the mass of playing feats of strength and agility on fungi is kept perfectly free from bac-

teria. Other species of ants clear spaces round their nests, where only such plants as serve them are allowed to grow, but in the case of the leaf-cutting ants symbiosis has reached a pitch where the ants | we shall then have but an imperfect idea. would die without their associated plant. A curious case of mutualism one step removed (as one says of cousins) is the relation between those formidable fightng ants, the Ecitons, and their slaves, Eciton predator, a Hun amongst ants in ferocity, hunts in dense hordes, a moving phalanx of this species often extending from over four to six yards. Every insect encountered on the march is torn to pieces and devoured. Of the details of their military discipline I have no time to speak; suffice it to say that it would do credit to Roman soldiers. Eciton hamata hunt both in dense masses and in detached columns. In the latter case the Ecitons are or a slave hunting expedition, and deliberately attack and ravage the nests of peaceable and lazy ants known as Hypoclinea, who keep ant-cows and care no more for honor and glory than did. Falstaff. The Hypoclinea rush out of their nests when attacked, carrying their pupae and larvae in their jaws; the Ecitons immediately seize and carry off the babies, without doing any injury to the parent ants, and the Hypoclinea go peacefully back to milk their aphides. The young captives are carefully reared in the nests of the Ecitons, and wait upon their masters with the most assiduous care, feeding, brushing and combing these big-jawed warriors. The Ecitons deprived of their slaves would starve to death in the midst of plenty, for their jaws are so enormously developed for the purpose of fighting, that they have ceased to be of use for the mastication of food. The experiment of isolating the warrior Ecitons has been tried, and the helpless creatures would have died but for the introduction of a slave, which immedi-

to fight joyfully and have no further trouble about anything. The ants alone would take up an article to themselves, so extraordinary is the development of (what I am tempted to call) their civilization in every direction; but it is time to turn our attention to other mutualists. The crabs known as a kind of live toothpick for the crocoas Hermit Crabs have the abdomen soft dile. The birds hunt carefully amongst and undefended, and as a rule find pro the crocodile's teeth for any small game tection in taking possession of the emp- to be found therein, and moreover ren-

ately hustled about feeding its masters

and assiduously giving them "a brush up." So in the case of the Ecitons

everybody is made happy; the parents of

the slaves are left in peace with their

ant-cows; the slaves are carefully brought up and protected from enemics—

for what creature would be so bold as to

attack an Eciton's rest?-and the war-

riors themselves live in a perfect Wal-

halla, where there is nothing to do but

N THE study of bi- | most amusing animals to watch in an aquarium, as one can see them hunting about for suitable houses; a big crab trying to squeeze into an impossibly small shell, and a small crab struggling with a ridiculously large shell. But there is a hermit crab, the Pagurus l'rideauxii, which has struck up an alliance offensive and defensive with a sea anemone, Adamsia palliada, the union being so close that the two seem to make up one animal. The crab makes the front part of this centaur-like arrangement, and with his long claws at work searches for prey, of which fragments fall to the share of the Adamsia, which hangs on behind, mouth downwards. This anemone is generally of a pale fawn color, speckled over with beautiful crimson or purple spots, while long delicate streamers, white or lilac in color, hang out from minute holes scattered over the body. The short finger-like tentacles are snow white, and brush over the sea cottom as the crab walks along. Thus whilst the Pagurus provides its friend with spare scraps, the Adamsia as its share of the alliance protects the soft "tail" of the

crab with its stinging hairs or nematocysts, and makes a much more convenient buckler to carry about than a heavy whelk shell would be. Col. Stuart Wortley has carefully watched the Pagurus in private life, and thus relates the result of his observations: "The crab after he has fished, never fails 'o offer the best morsels to his neighbor, and often during the day ascertains it is not hungry. But more especially when he is about to change his dwelling does he redouble his care and attention. He manoeuvres with all the delicacy of which he is capable to induce the ane more to change its shell; he assists it in detaching itself, and if by chance the new dwelling is not to its taste, the crab seeks another till the Adamsia is perfect-

Another hermit crab faces the world with a whole colony of sea-anemones fixed on his tail; he is protected by the stinging hairs of the anemones from the octopus and other enemies, and they profit by portions of their friend's food. A third species of crab goes about brandishing a sea anemone in each claw, a habit which seems much more convenient for the anemones than for the crab. Some animals have the humble func-

Beneden, one of the chief authorities on the subject of mutualism: "It is known that lobsters, as well as crabs and many other crustaceans, carry their eggs under the abdomen, and that their eggs re-Small workers are employed in his limbs as far dislocated as possible; a heap of monster cannon balls, which he struggles to surmount, placing one foot formed like an air pladder on one ball, balancing and extending his body, folding his limbs on each other, or bending his body upwards like a caterpillar, and of the attitudes it assumes, and which it varies incessantly." This queer leech makes a kind of ship of his crustacean host, and feeds on the cargo; be sucks the conterts of all the eggs that are unfertilized or dead. Dr. Weir, another keen observer, says that he has never seen this leech attack a healthy egg, and he fully corroborates Van Beneden's account of its extraordinary contortions. saying he has seen this crea ure stand on its hind legs, bend its body down between them and with a quick flirt turn a complete somersault. It will easily be seen how great is the mutual benefit in this case; the crustacean is relieved from a useless burden which moreover would prove injurious to its healthy eggs, and the leech lives the life of an epicure.

Dr. Weir has made a particular study of the various animals which live on the skins of mammals and fish and amongst the feathers of birds, and which prove to be true mutualists, doing only beneficial work for their hosts. One of these mutualists (Liothe Sacculatum) may be seen freshening and beautifying the sheen of feathers by eating all the dead epithelial cells with which it comes in contact; its curved jaws acting as little scrapers.

Dr. Weir tried the following experiment with two gilt catfish, the result showing how essential the services of these little scavengers are to the health of their hosts: "The eatfish, whose skin had been thoroughly cleaused with a solution of salt water and borax, were placed in a tank of filtered water, in which there were no gyropeltes, the mutualists of this species of fish. In two days their skins had lost their beautiful golden sheen and had become dull and lustreless. The fish clearly showed by their actions that they were not in good health. They remained at the bottom of the water almost without motion. then took them out and found their skins covered with slimy nucus. I then placed them in a tank of pond water, in which there were multitudes of gyropeltes, and on removing them in a few minutes their skins were found covered with thousands of these mutualists busy at their cleansing work. After a day's residence in the pond water the skins of the catfish had recovered all their lustre and beauty, and their lively movements showed restored health.'

A classical case of mutualism is that of the bird-a species of black-headed plover-mentioned by Pliny, which acts ty shell of some mollusc. They are der themselves serviceable by the shrill fungi have the property of assimilating Baker Hotel.

cries they give at the sight of men or ani- the free nitrogen in the air and chemicalmals. The crocodile, like the burglar in ly preparing it for the use of plants, the "Pirates of Penzance," "loves to lie Similar bacteria are found on the roots a basking in the sun," and whilst he of many orchids; the Mycalium (answertakes his snooze on the Nile mud flats ing to the roots of ordinary plants) of inhe has the peaceful consciousness that numerable species of fungi are symbihe will be shricked wide awake if at otic on the roots of our great forest

sects which are most useful in dissemin- either directly or indirectly dependent ating their pollen; in bright colors, deli- on the much abused bacteria. are prepared against insects whose visits

would be useless. Darwin long ago remarked the inter-This dependence of clover on humblebees has been exemplified in New Zeared clover had been annually imported into New Zealand, and flourished well. but ripened no seed. In 1885 a hive of spreading over a considerable distance, penetrable mystery lies behind all exand the next year the farmers of Lyttleton were able to make use of clover seed from their own fields.

The whole family of butterflies and moths are also, with a few exceptions, symbiotic upon flowers. A moth fertilized plant may generally be known by its white or pale yellow flowers, which become odorous at night. Perhaps no instance of symbiosis amongst moths is more extraordinary than that of the Yucca lily and the Yucca moth. This lily, which is absolutely dependent upon its attendant moth for fertilization, is a remarkably handsome Californian plant bearing a spike of a hundred or more blossoms. The Yucca moth seems to make a special object of collecting the pollen of the lily from the stamens, roll ing this pollen into round balls, and car rying it to another flower. Among these the moth by means of a long tube, bores a hole right through the wall of the ovary, and lays its egg inside the ovary by the side of the young ovules, then creeping up the style the moth places the pollen which it brought from the other flower, or the stigma, and even forces this pollen down the style as far as it The ovules are of course fertilizcan. ed by the pollen, which coming from 10other flower, causes the ovules to ripen into strong succulent seeds. The eggs meanwhile form young moths inside the ovary, and these young insects eat an many of the seeds before they escape out doubt that the Yucca plant repays the moth for depositing pollen and thus fee tilizing its flowers, by sacrificing some of

Yuccas grown where there are no moths

produce no seed, as I myself witnessed at Hatzic, where a splendid spike of

flowers proved absolutely barren. The whole story of the fertilization of the fig would seem miraculo not of common occurrence. In fig-growing countries there are two varieties of fig cultivated. The variety which bears true or edible figs is called Ficus and ancalled the Caprificus. The flowers of the fig trees are contained inside the pear-shaped receptacle we call a fig. The flowers at the bottom of the cup are usually pistillate or female flowers, those at the top male or staminate. Now the female flowers of the Caprificus or barren variety have short styles, and mature long before the male flowers at the top The female flowers in the of the cup. Ficus or edible fig have very long styles, each bent like a hook. Now the wasp. which is the mutualist of both species of fig, enters the Caprificus, proceeds to the female flowers and deposits its egg inside the ovary. The larva hatched from this egg increases in size and fills the whole of the ovary, which thus can produce no seed, but forms which is called a gallflower. So that in Caprificus all the ovaries have become converted into gall-flowers hence its barrenness. The insects in side the galls when hatched creep to the top of the cup, and on emerging have to forcibly brush through the male flowers, which are now ripe and discharging their pollen; thus the young wasps on emerging are covered with pollen. They then proceed to the Ficus hunting for some place to lay their eggs, and descend in to its cup in search of female flowers. But in the edible fig the female flowers have long hooked styles and the wasp can hardly ever succeed in its attempt. In its fruitless endeavors to find

place in which to deposit its eggs, the wasp confers a vital benefit on the Ficus, for it brushes the stigmas of the sures that cross fertilization which is O. Weiler (11 each). so essential to the fig. But a still greatrise to a species of parthenogeneus; the erstone 15 each. ovaries swell and all the effects of ordinary fertilization follow. Apparently

One of the most wonderful botanical R. D. Featherstone (12 each). discoveries of recent years has been that nitrogen-secreting bacteria found or known empirically that the soil of a field singles, known traps and angles. clover were planted in it, and after a couple of years "ploughed in." The little swellings on the roots of leguminous plants are found on microscopical exam-

trees, whose seedlings will not grow in The whole of the immense family of earth which has been deprived of these bees may truly be said to be the mutual- fungi. Moreover recent experiments ists of flowers. Flowers supply bees show that milk and other foods which with all the nectar and pollen they require for honey and cell making, and the deprived of their characteristic bacteria, bees in return fertilize the flowers by are rendered innutritious and indigestible the pollen with which they are laden. In | So, as I said in the opening of my artinumerable are the devices whereby vari- cle, experiment appears to prove that the ous flowers endeavor to attract those in- life of the higher animals and plants is

cious scents, deep lying well of nectar, The study of Symbiosis shows us chiefplatforms on which to rest, and guiding ly the bright side of Nature, and again lines of stripes; whilst various arrange- and again we seem to see evidence of ments of hairs and bristles and long beneficent design. At least we see contubes inaccessible to unwelcome visitors, | trivances so extraordinary and so 13mirable, that we have to speak of them in terms implying a living Will. But if from the study of Symbiosis we turn to dependence of cats, mice, humblebees and that of Parasitism, where one organism ted clover. Cats eatch mice, which eat lives at the expense of another; where humblebees, the fertilizers of red clover. | the parasites often become so degenerate as to be hardly recognizable, where the hosts suffer horrible deaths; we feel that land in an unexpected way. German it is better not to attempt to apply the terms of our human consciousness to Nature. Phenomena we can study, but the power behind all phenomena we canwild bees was imported from England | not know, at least in this phase of existand set free in the neighborhood of ence. Science is becoming more humble Lyttleton. They multiplied greatly, as she recognizes what a vast and im-

> I have been obliged to compress unduly the latter part of my paper, but I fear that it has already run to an incrdinate length. For the more we study the phenomena of Symbiosis the wider does its scope become ALICE BODINGTON.

New Westminster.

CLOSE OF THE CELEBRATION

Victoria Wins From Seattle in the Third of the Series of Baseball Games.

Successful Day's Racing at Bowker Park-Result of Trap Shooting Contest.

The celebration is over and the thousands of visitors who crowded the city during the latter part of last week have gone home. Saturday evening the visitors attended the different places of amto the light. Therefore there is no the Sound on the City of Kingston the same evening and the Rosalie yesterday morning and the Kingston again last night had full passenger lists. its seeds as food for the young moths.

VICTORIANS VICTORIOUS.

Saturday's Baseball Game Results in a Win for the Amities.

The third and final game of the celebration series of baseball was played at Caledonia Park on Saturday afternoon other variety which bears barren figs is in the presence of a large assemblage of people and resulted in a victory for the home combination. It was, in sporting parlance, "a rattling good game" and a number of brilliant plays were made. Following is the score by innings:

Summary—Earned runs, Seattle 5; Amity, 6. Three base hits, Jackson; two base hits, Duck (2), Gus Gowen, Jackson, Wriglesworth, N. Nelson, Bird and Simmons. Bases on balls—Seattle, 4; Amity, 2. Hit by pitcher, Widdowson, Gomnitz. Struck out by Simmons, 5; by Reid, 1; by Franklin, 5. Wild pitches, Simmons, 2. Passed balls, 0. Time of game, 2 hours. Umpire, T. W. Edwards.

AT THE OAK BAY TRAPS.

List of Winners in the Different Events -Good Scores Made.

On Saturday afternoon at the Oak Bay grounds five events of the celebration programme of the Victoria and Union gun clubs were shot off. Good

scores were made. First event, ten singles, known traps and angles. The winners were: F. S. Maclure, W. H. Adams, R. Jackson and Dr. Smith (9 each), J. C. Maclure, II. Combe, C. W. Minor, E. G. White and M. Halworth (8 each), A. Clairborne, W. White, B. H. John, F. W. Cowperwaite, R. Short and H. N. Short (6 each).

Second event, 15 singles, unknown au-

gles. The winners were: F. S. Maclure, R. Jackson and W. Bickford (13 each) female flower with he pollen it has B. H. John and C. W. Minor (12 each), brought from the Caprificus, and so en. H. Combe, E. G. White, Dr. Smith and

Third event, ten singles and five pair. er marvel has been observed recently; in known traps and angles. The winners in many cases the mutualist wasp never this event were: B. H. John 18, H. N. succeeds in entering the receptacle of Short 17, F. S. Maclure and C. W. Min-Ficus, but its attempts at entrance give or 16 each, H. Combe and R. D. Feath-

The fourth event was for 15 singles known traps and angles. The winners the insect's attempts at entrance cause were: F. H. Hewlings, Dr. Smith, H. something analogous to a nervous shock. Combe, E. G. White and C. W. Minor for the fruit is not formed if the wasp (14 each); W. White and H. N. Short (13 each); B. H. John, F. S. Maclure and

The tournament concluded with a con solation match for all who had particithe roots of clover, peas, beans and other leguminous plants. It had long been or divided first or second money. Ter became richer in nitrogenous material if prize, \$11; second, \$6.60; third, \$4.40. H. A. Munn and O. Weiler (8 each), Dr. Gatewood (7), D. R. Featherstone, A. Clairborne and S. C. Kirk (6 each). C. W. Minor, who made a score of 50 ination to have their cells swarming cut of 60, won the silver watch present with bacteria (Rhizobium) and these ed by Mr. J. A. Virtue of the Mount AT BOWKER PARK.

Successful Afternoon's Race Meeting on

There was quite a large attendance at the races held on Saturday afternoon at Bowker Park.

Messrs. Thomas Shaw and C. E. Renouf acted as judges; Mr. Temple as official timer, and Dr. J. C. Davie as starter. The first event, open to gentlemen's road horses, brought out Dr. Eberts' b.g. Billy Rooker, with Rod Tolmie holding the ribbons; M. Powers' b.m. Black Bess, owner up; J. S. Byrn's b.g. Excelsior, driven by Bert Powell; - Gardner's b.g. Billy, DeMars; and G. W. Aikman's b.g. Fred, owner driving. Billy Rooker won the race in two heats, Aikman's Fred second and Excelsior third. Time, 3:07.

Thomas Dunn's Warrimoo, ridden by A. J. Dallain, won the race for gentlemen's saddle horses, taking the second and third heats. L. Stanley's Riley, Major Pearse up, took second place. The other starters were J. A. Aikman's Mack, J. S. Byrn up, and W. T. Drake's Pet, owner up. Warrimoo is an imported owner up. Warrimoo is an imported thoroughbred horse and, though not eligible, was allowed to start. Mack showed fine style for a horse just taken out of the buggy, and admirers of horseflesh expect to hear better things from him in his next race.

Major Pearse won the polo pony race in two heats, George Ward second, F. Ward third. J. S. Byrn was almost

distanced. There was an Indian pony race, foi lowed by the steeplechase between A. Payne's Taffy, ridden by Major Pearse, and a sorrel horse ridden by A. E. Mc-Phillips. The latter won. Mr. Stanley, of the driving park, has been prevailed upon to repeat the programme on Satur-

the polo steeplechase will be left out. TO-MORROW THE DAY.

day. June S. The half-mile heats and

The Great Potlach to Take Place on the Reserve To-morrow.

> The grand event which all Indiansand not a few Victorians—are eagerly waiting, will be held to-morrow at 10 o'clock on the Songhees reserve. Today was the date which had been set for the affair, but it was unavoidably postponed until to-morrow.

George Cheetlam, the Indian who is giving the monster potlach, was seen by a Times man this morning. He said the affair would be one of the largest and grandest ever held in Victoria. "It can hardly," he said, "be called a potlach, although presents are distributed. I will clear the large space to the rear of my house—that big one over there with the flag pole in front-and ample room will provided. You may tell everybody usement. The first contingent left for to come. They will be welcome and will see a grand display of carvings in wood, idols, totem poles, etc.'

This will close the holiday season among the Indians and in a few days the reserve will assume its usual deserted appearance, save for the presence of a few Songhees lazily basking in the

-The best value for your money at Shore's hardware.

At the U.S. civil service examination recently held for library cataloguer and library clerk for the Agricultural' Department, of the thirty applicants for the former all the men failed to pass, while five out of sixteen women were successful. Of the ten applicants for the latter, the eight men failed and the two women passed.

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