

And its plaintive distress almost brought the tears in my eyes. Our silence accorded with the sensibility it displays ; and perhaps melancholy would have usurped the place of mirth, had not Mac emitted a voluntary in Erse, the beauties of which we could not appreciate, knowing only that it began with a squeak and ended in a grunt, like most of the same kind. He was good enough, however, to make a free translation afterwards, which was, as near as I could remember—

Flora, the widow of Lachlan, had a brown cow—
The cow of Flora, the widow of Lachlan,
Was a mother to her children :
It gathered grass in the valley.
The stranger spoiled the widow of Lachlan,
And her hearth was cold,
And her children died before her,
And she wept and died at the Cell of Inver.

“And who was Flora?” enquired the curious Ned; “I don’t think an old woman and a brown cow were worth making a song about.”

“Maybe no, Mister Ned,” and the big tear stood in his eye, “but she was my mother, and I was far awa’ at sea, an’ couldna gie her comfort.”

Ned was silent, and Mac rose to procure more firewood, which, from the time he took, appeared to be difficult to find.

I will give you at present only another of our songs that evening, and this only because I imagine you may not have seen it before. It seems taken from the Norse:—

The merman sat by the Yartog Voe,
Where the whirlpool drank in the waves below ;
And the angry billows around him broke
As they dashed their brows on the tangly rock.
Ah woe!

He raised his hands with a piteous wail,
And his cry was heard o’er hill and dale—
As a shipwrecked sailor would cry for aid,
When the green sea foam flew o’er his head.
Ah woe!

And a maiden heard that wail and cry,
And the tear hung trembling in her eye ;
For her troth was given, and the hour was come,
When her lover should give his hand and home.
Ah woe!

To the shore she flew in fear and dread,
While the merman struggled as hope had fled—
She stretched out her hand her lover to save,
And snatch him out from a watery grave.
Ah woe!

But the merman clutched that hand of snow,
And plunged in the whirlpool of the Voe :
He laughed as he pressed the shrieking bride,
And sank beneath Yartog’s foamy tide.
Ah woe!

TO MY MOTHER ON HER BIRTHDAY.

With mingled feelings I behold
 Thy natal hour draw near,
 And start to hear the requiem
 Of this, another year:
 Sad, O, my mother! is the thought,
 That, though my cup runs o'er,
 My love, my duty, and my home,
 Are at thy side no more!

And shall I never near thee sit,
 To soothe thy many cares,
 And gaze upon those mild blue eyes,
 Less dimmed by time than tears;
 Or listen to thy voice of love,
 Murmuring in accents low,
 Like some secluded mountain rill,
 Refreshing all below?

Or talk with thee of those once loved,
 Now slumbering in the dust,
 And follow them, with eye of faith,
 To mansions of the just;
 Or listen to thy counsels sweet,
 That urged my soul to rise
 Above this earth's low sphere, and tread
 The pathway to the skies?

Ah, no!—a mother's cloud of grief
 Around thy lot is thrown—
 The flower by thee so fondly reared,
 And called so long thine own,
 Is severed from its parent stem—
 Has left its native bower,
 To twine around another tree,
 And brave life's tempest hour.

Yet, never can thy child forget
 Those scenes to mem'ry dear
 Or pass, without a grateful lay,
 This season of the year:
 December, in this sunny clime,
 Has many charms for me—
 It seems to bear me back to home,
 To childhood, and to thee.

And, oh! my mother! let thy heart,
 Thy anxious heart, rejoice;
 For, though she cannot see thy face,
 Or hear thy gentle voice,
 Thy daughter's lot is happy still—
 A kind and faithful friend
 Is still intent to bless her days,
 To comfort and defend.

And there is One more faithful still,
 Whose love is pledged to save—
 Whose power will re-unite us all
 Beyond the envious grave!
 O! may His love thy portion be,
 Thy comfort and thy stay;
 Thy shelter from the storms of life—
 Thy guide to endless day.

Adelaide.

ELIZABETH A—R.

THE PHILOSOPHY OF PARASITIC GENERATION.

NO. I.

A DEMONSTRATION OF THE MODE OF ORIGIN AND EXTERMINATION OF THE SMUT, RUST, AND FLY IN WHEAT, SCAB AND ROT IN SHEEP, BLIGHT AND MILDEW IN TREES, AND EVERY OTHER SPECIES OF PARASITE THAT PREYS ON THE FOOD OF MAN.

BY. W. DURIE, ESQ., SURGEON.

WHEN Newton saw the apple fall—What then? Had not hosts of other times, innumerable, seen a similar phenomenon? True, but not with a similar vision. In this familiar every-day occurrence, Newton saw the secret of the universe—the law of gravitation. Thus, the most common-place phenomena, when faithfully followed out, lead us up to the primitive laws of the universe.

The phenomena which form the basis of the following inductive reasoning, are not less familiar than that which revealed gravitation; and in the antiseptic action of salt on animal fibre, it shall be my endeavour to demonstrate, stands revealed the *grand conservative law of the organized creation*; and, as I shall designate it, *the law of vitalization*.

A principle of antagonism pervades the universe: in its action, as displayed between the centripetal and centrifugal forces, we see the power by which the several parts of the planetary system are preserved in their respective places. Were the accurately adjusted balance between these two forces to be impaired—were the centripetal to overpower the centrifugal, or *vice versa*, the whole material universe would return to its primitive chaos.

A like principle of antagonism, we shall see, sustains the whole fabric of the organized creation. Two powers, nicely balanced in their action on each other, the vital and putrescent, carry on the whole economy of organized nature, as based on the system of decay and reproduction. Were the vital to predominate, things would remain in *statu quo*; there would be no decay, and, consequently, no reproduction again. Were the putrescent to gain the ascendant, the whole fabric of animated nature would dissolve, and,

Like the baseless fabric of a vision,
Leave not a wreck behind.

We shall see that the like centrifugal power, the putrescent principle, has a constant tendency towards the ascendancy, developing phenomena, of the power of which mankind are at this moment comparatively ignorant, though suffering daily and severely therefrom.

An enquiry, then, into these phenomena, or into the laws which regulate the balance between the vital and putrescent power and their modes of mutual reaction, present a vast, though hitherto nearly unexplored field, abounding in important bearings on the best interests of man.

To illustrate the agency of the putrescent principle on the living animal fibre, the following extract from the Report of the Poor Law Commissioners for 1838 will be appropriate:—

“ It is a matter of experience, that during the decomposition of dead organic substances, whether vegetable or animal, aided by heat and moisture, and other peculiarities of climate, a poison is generated, which, when in a state of high concentration, is capable of producing instantaneous death, by a single inspiration of air in which it is diffused. Experience also shows that this poison, even when it is largely diluted by admixture with atmospheric air, and when, consequently, it is unable to prove thus suddenly fatal, is still the fruitful source of sickness and mortality; partly in proportion to its intensity, and partly in proportion to the length of time and the constancy with which the body remains exposed to it. Facts without number, long observed, such as the great amount of sickness and mortality in many districts; the fevers, the dysenteries incident to armies in their encampment in certain localities, several hundred men being sometimes seized with disease in a single night, and great numbers dying within twenty-four or thirty hours; the dreadful destruction which occasionally took place in the crews of ships in which cleanliness had been neglected, and especially in which the bilge-water had been allowed to collect and putrefy, sufficiently attested the presence of deadly poison. But the poison was too subtle to be reduced to a tangible form; even its existence was ascertainable only by its mortal influence on the human body; and although the induction commonly made as to its origin, namely, that it is the product of putrefying vegetable and animal matter, appeared inevitable, seeing that its virulence is always in proportion to the quantity of vegetable and animal matters present, and to the perfect combination of the circumstances favorable to their decomposition, still the opinion could only be regarded as an inference.

“ But modern science has recently succeeded in making an important step in the elucidation of this subject.

“ It has now been demonstrated, by direct experiment, that, in certain situations in which the air is loaded with poisonous exhalations, the poisonous matter consists of vegetable and animal matter in a state of high putrescency. If a quantity of air in which such exhalations are present be collected, the vapour may be condensed by cold and other agents; by which means a residuum is obtained, which, on examination, is found to be composed of vegetable and animal matter in a state of high putrefaction. This matter constitutes a deadly poison. A minute quantity of this poison applied to an animal, previously in sound health, destroys life with the most intense symptoms of malignant fever. If, for example, ten drops of a fluid containing this highly putrid matter be injected into the vein of a dog, the animal is seized with acute fever, the action of the heart is inordinately

excited, the respiration becomes accelerated, the heat increased, the prostration of strength extreme, muscular power so exhausted that the animal lies on the ground unable to stir or to make the slightest effort; and, after a short time, it is actually seized with black vomit, identical in the nature of the matter evacuated with that which is thrown up by a person laboring under yellow fever. By regulating the intensity and the dose of the poison thus obtained, it is possible to produce fever of almost any type, endowed with almost any degree of mortal power.

"It is proved further, that when this poison is diffused with atmosphere, and is transported to the lungs in the inspired air, it enters directly into the blood and produces various diseases, the nature of which is materially modified, according as the vegetable or animal matter preponderates in the poison. In the exhalations which arise from marshes, bogs, and other uncultivated and undrained places, vegetable matter predominates: such exhalations contain a poison which produces, principally, intermittent fever or ague, and remittent fever.

"The exhalations which accumulate in close, ill-ventilated, and crowded apartments, or the confined situations of densely populated cities, where no attention is paid to the removal of putrefying and excrementitious substances, consist chiefly of animal matter: such exhalations contain a poison which produces, principally, continued fever of the typhoid character.

"There are situations, as has been stated, in which the poison generated is so intense and deadly, that a single inspiration of it is capable of producing instant death; there are others, in which a few inspirations of it are capable of destroying life in a few hours; and there are others, again, as in dirty and neglected ships—in damp, crowded, and filthy gaols—in the crowded wards of ill-ventilated hospitals filled with persons laboring under malignant surgical disease, and some forms of typhus—in the crowded, filthy, close, unventilated, damp, undrained habitations of the poor—in which the poison generated, though not so immediately fatal, is still too potent to be breathed long, even by the most healthy and robust, without producing fever of a highly dangerous and mortal character.

"But it would be a most inadequate view of the pernicious agency of this poison, if it were restricted to the diseases commonly produced by its direct operation. It is a matter of constant observation, that even when not present in sufficient intensity to produce fever, yet, by disturbing the function of some organ, or set of organs, and thereby weakening the general system, the poison acts as a powerful predisposing cause of some of the most common and fatal maladies to which the human body is subject. The deaths occasioned in Great Britain by diseases of the digestive organs, for example, by inflammation of the air-passages and lungs, and by consumption, form a large proportion of the animal mortality. No one, who lives long in or near a malarian district,

is ever, for a single hour, free from some disease of the digestive organs. By the disorder of the digestive organs, the body is often so much enfeebled, that it is wholly incapable of resisting the frequent and sudden changes of temperature to which all climates are at times subject; the consequence is, that the person thus enfeebled perishes by inflammation set up in some vital organ, and more especially in the air-passages and lungs, or by consumption—the consequence of that inflammation. If then, as is commonly computed, of the total number of deaths that take place annually on the globe, nearly one-half are caused by fever in its different forms, to this sum must be added the number who perish by diseases caused by the indirect operation of this poison.”

The above will serve to convey a tolerably correct idea of the power of the putrescent principle in antagonising the vital principle, when the system becomes inoculated, as it were, from *without*. But it is to the development of this noxious agency *within* the frame, spontaneously, as it were, both of animals and vegetables, that I mean to direct attention, and which has, so far as I know, been hitherto completely overlooked.

It is the common opinion, that the putrescent principle cannot be developed within an organized body while life continues. We shall find that this is an egregious fallacy, originating in the common notion, that the putrefactive is the only process of decomposition. Life is not an abstract principle independent of and distinct from the body. Like the mind, which is only cognizable through its material organ, the brain, and apart from which has no existence in this world; so life is utterly unknown to us, save through its physical condition. When the life is gone out of organized matter, it passes forthwith, unless artificially restrained, into the putrefactive decomposition. But antecedent stages of decomposition may be developed, and life yet remain in the organ, as proved by its restoration to a sound state by appropriate remedies. The putrefactive stage of decomposition is not the only one that takes place in vitalized nature; there is a vinous decomposition, and an active decomposition that precedes the putrefaction in vegetable organic matter; so also, we shall find, that in the animal fibre decomposition may be going on long before putrefaction shows itself.

If, then, the putrescent principle is so overwhelmingly fatal to the vital, and if, moreover, it be constantly struggling to attain the ascendancy, seeing that it is the doom of all organized matter to decay and die; what means does nature adopt to restrain its destructive power, and preserve a due balance between itself and the vital?

We have seen how rapidly developed it is throughout the system of creation, and that, were there not some equally powerful check to it, the whole organized fabric of nature would inevitably dissolve before it. What becomes of it then? How is it consumed? What means are employed to neutralise it?

A kingdom of the organized creation, which, in point of general species, is equal to the aggregate of all the others, seems to have been specially created for this purpose; and, while the putrescent principle is death to animal and vegetable beings in every stage of existence, insects are generated, reared, and live on putrescence. *Nay, further, they have not the power of attacking organic matter unless the putrescent principle predominates within it.*

This proposition, so far as I know, is new to the world. The common notion supposes that insects can attack vegetable life, whether sound or unsound. Yet a moment's reflection must convince us of its error.

When, for example, the caterpillars appear on cabbages, were the common opinion sound, it ought to sweep off every one indiscriminately, but it does not do so; it leaves many untouched. Now, what is the principle of selection? Why, the one I have just divulged; and, in point of importance to man, I will venture to say, that it stands second to none which the march of discovery has yet made known—*provided it be true.*

Look at the ravages, as they are called, committed by insects on the vegetable world, threatening sometimes a famine in the land. In every year, thousands of acres of wheat are cut off by the fly in Scotland: in one small district alone, the Carse of Gowrie, the garden of Scotland, the loss sustained has been estimated at from £20,000 or £30,000 to £36,000, during the successive years of 1837, 1838, and 1839. In America, the Hessian fly created such destruction among the wheat crops, that the British Government took the alarm at its probable importation, and summoned the Privy Council, which sat day after day in deep consultation, and, after filling two hundred pages with the result of their deliberations, left the matter pretty much where they found it.

As illustrative of the position here advanced, that sound vegetable matter enjoys an immunity against insect ravages, and at the same time showing the readiness with which error may creep in on this subject, I shall state a fact that fell under the observation of a friend, last year, in this colony. Several acres of wheat, when visited by the proprietor, who resided at some distance, appeared in high health and promised an abundant crop. On repeating his visit, however, a week or two after, he found legions of caterpillars feasting on its remains; and he concluded at once, and very naturally, that the caterpillars had caused all the mischief. Fortunately, however, for the cause of truth, the overseer, who lived on the spot, observed that the crop had been blighted *antecedently* to the appearance of the caterpillars—that the blight caused the caterpillars, and not the caterpillars the blight.

Various modes of destroying insects has been suggested: a writer, in a late number of this Magazine, has proposed to attract them by scorched rags; but a very small portion only can be

destroyed in this manner. The common-sense way, which will generally be found to be the most scientific, of destroying them, is to give them no food—raise *sound* vegetable life, and there will be nothing to apprehend from insects. But how is this to be done? There's the rub. Wherever putrescence abounds, there we find insect life abounding. It is a law of nature, that the supply of food regulates the increase of those beings who live on it; hence, in hot countries, where animal and vegetable decomposition proceeds rapidly, we find the air and earth swarming with myriads of the insects tribes; true to the place assigned them in the great scheme of creation, consuming the noxious principle as it is revealed, and saving the other kingdoms of life from dissolution.

Allied to the insect race, the office of which in creation has just been discussed, there is a tribe of beings, the natural history of which has hitherto puzzled all shades of philosophers. I allude to parasitic productions; as a specimen of which, I may cite the intestinal worm. How are these generated?—from eggs, of course. But how are they again produced from kindred parents? An animal may be entirely free from these worms—not a vestige of them to be detected within its frame—and yet, by change of food or other circumstances impairing health, it becomes quickly infested with them. Here is the enigma. How came the eggs or parents developed within the animal? Now, I shall endeavour to show, that the parasite is to the individual what the insect is to nature; their use is to consume putrescent matter as generated within the system, and prevent the fatal effects of its accumulation. A parasite has no existence independent of its principal—through him it lives, and moves, and has its being; detach it from its parent, and it forthwith dies.

Moreover, when the vitality in the animal fibre is too low for assimilation to the proper tissue of the animal nature, it develops a species of insect which preys on the putrescent matter, and saves the principal from the effects of its accumulation in the system.

This is the *Philosophy of Parasitic Generation*, and this the test of its truth. *Restore the animal fibre to its maximum of vitality and the parasite perishes.*

Hitherto I have discussed only the means employed to consume the noxious principle *after* it has been formed; I shall now consider the grand antidote which nature furnishes *against* its formation, and introduce an element, in which, as I shall show, may fairly be regarded as residing the "Elixir of Life" and the "Philosopher's Stone"—an element which lays the axe at a most prolific, though hitherto unsuspected, root of disease; and an element which converts corruption into capital, and the worthless food of worms into the golden fruits of the earth.

Ferney, Mount Barker,
12th Nov., 1842.

THE BULRUSH CATERPILLAR.

(From the Tasmanian Journal.)

Description of the Bulrush Caterpillar (*Sphæria Robertsia*; native name, *Aweto—Hotete*), by the Rev. R. TAYLOR, Waimati, New Zealand.

THIS singular plant, which is a native of New Zealand, may be classed amongst the most remarkable natural productions of the vegetable kingdom.

There are birds which dispossess others of their nests, and marine animals which take up their abode in deserted shells; but this plant surpasses all in killing and taking possession; making the body of an insect—and that too, very probably, a living one—the foundation from which it rears its stem, and the source from which it derives its support. It certainly forms one of the most surprising links between the animal and vegetable kingdom yet noticed, and, as such, merits as circumstantial a description as our present imperfect acquaintance with it will allow.

The *Aweto* is only found at the root of one particular tree, the *Rata*. The female *Pohutakana*, the root of the plant, which in every instance exactly fills the body of the caterpillar in the finest specimens, attains a length of three inches and a half; and the stem, which germinates from this metamorphosed body of the caterpillar, is from six to ten inches high: its apex, when in a state of fructification, resembles the clubheaded bulrush in miniature, and, when examined with a powerful glass, presents the appearance of an ovary. There are no leaves—a solitary stem comprises the entire plant; but if any accident break it off, a second stem arises from the same spot. The body is not only always found buried, but the greater portion of the stalk as well, the seed vessel alone being above ground: when the plant has attained its maturity, it soon dies away.

These curious plants are far from being uncommon. I have examined at least a hundred. The natives eat them when fresh, and likewise use them, when burnt, as coloring matter for their tattooing, rubbing the powder into the wounds, in which state it has a strong animal smell.

When newly dug up, the substance of the caterpillar is soft; and when divided longitudinally, the intestinal canal is distinctly seen. Most specimens possess the legs entire, with the horny part of the head, the mandibles, and claws. The vegetating process invariably proceeds from the nape of the neck, from which it may be inferred that the insect, in crawling to the place where it inhumes itself prior to its metamorphosis, whilst burrowing in the light vegetable soil, gets some of the minute seeds of the fungus between the scales of its neck, from which, in its sickening state, it is unable to free itself, and which consequently, being nourished by the warmth and moisture of the insect's body, then lying in a motionless state, vegetate, and not only impede the process of change in the chrysalis, but likewise occasion the death of the insect. That the vegetating process thus commences during the lifetime of the insect, appears certain, from the fact of the caterpillar, when converted into a plant, always preserving its perfect form: in no one instance has decomposition appeared to have commenced, or the skin to have contracted or expanded beyond its natural size.

A plant of a similar kind was presented to me in 1837, by a Mr John Allan, who discovered it growing in abundance on the banks of the Murrumbidgee, in a rich black alluvial soil. The insect in some specimens was six inches long, and the plant about the same springing, like the New Zealand one, from the nape of the neck. This plant is quite different from the other, being a thick stem, formed by the close union of several stalks which unite at the top, and are surrounded by a fringe, which, when expanded, assumes the appearance of a full-blown flower upon the surface of the soil, the rest being buried in the ground: this top has a brown velvety texture. Many similar ones were found in the same locality, which is the only part of New Holland in which they have hitherto been seen. Numerous empty shells and holes were observed in the vicinity; and, at night, the number of large brown moths was so great as more than once to extinguish my friend's lamp.

THE MONTHLY RECORD, NOVEMBER, 1842.

ACTS OF COUNCIL.

The following Acts have passed the Legislative Council:—

Oct. 27.—An Act to regulate the keeping and conveying of Gun-powder.

Nov. 2.—The Act for regulating summary Proceedings before Justices of the Peace.

Nov. 2.—The Act for the regulation of the Sessions of the Peace.

Nov. 23.—An Act for the protection of the Waste Lands of the Province.

The licences under this Act are of three kinds, namely, first a depasturing licence authorising only the depasturing of stock; second, an occupation licence, authorising enclosing and building, with a view to depasturing stock; and third, a timber licence, authorising only the cutting, sawing, splitting, or removing timber or other natural produce.

Terms of obtaining licences: a depasturing licence ten shillings and sixpence; an occupation licence five pounds; a timber licence one pound.

Assessment on stock to be levied yearly: for every ram, ewe, wether, and weaned lamb, one penny; for every bull, ox, cow, steer, heifer, and calf above the age of six months, sixpence; and for every horse, gelding, mare, and foal above the age of six months, two shillings and sixpence. *Provido*, purchasers of eighty acres of land allowed a deduction of four shillings.

Nov. 23.—His Excellency, by Proclamation issued this day, has appointed that Courts of General Sessions of the Peace shall be holden at the Supreme Court House, on the second Tuesday in the months of January, May, and September, in every year, and at such other times and places as the Court may lawfully adjourn to.

Nov. 23.—His Excellency the Governor has been pleased to appoint his Honor Chas. Cooper, Esq., Judge of the Supreme Court of the Province, to be Chairman of the Courts of General Sessions of the Peace of the Province.

Nov. 23.—His Excellency has been pleased to appoint John Henry Richman, Esq., Clerk of the Bench of Magistrates, to be Clerk of the Court of General Sessions of the Peace.

PROGRESS OF DISCOVERY.

Mr Burr, the Deputy Surveyor General, while out in search of the late Mr C. C. Dutton and party, who appear to have lost their way and perished, while endeavouring to bring round a herd of cattle from Fort Lincoln, has discovered an exceedingly rich tract of undulating country, composed of hills and well-watered valleys, running from Mount Arden to the north-east. We understand it is Mr Burr's opinion that this fertile tract extends uninterruptedly across the whole continent.

OVERLAND FROM PORTLAND BAY.—

About a fortnight since, five men, two women, and four children arrived from Portland Bay in a dray with five bullocks; they were eight weeks on the journey, having been delayed by the loss of one of their bullocks, the continual straying of others, the wandering from their tracks and several other disasters. They were for three days, before their arrival at the Lake, without meeting water. They fell in with several large bodies of natives of the Milmenrura tribe, who were very friendly.

THE INSTITUTE.

The following are the Lectures for December:—

Dec. 6.—Chemistry, Dr Kent.

20.—Colonization, C. Mann.

BIRTHS AND DEATHS.

BIRTHS.

October 30th.—The lady of John Hallett, Esq., of a daughter.

November 8th.—Mrs Arch. Scott, Light-square, of a son.

November 10th.—The lady of Chas. Gooch, Esq., of Richmond, of a son.

DEATH.

November 16th.—In Gilbert-street, aged 14 weeks, Frances Anne, the infant daughter of Oliver K. Richardson, Esq.