

[For the Deseret News.]  
**ANIMAL LIFE.**

BY ALEXANDER OTT.

By a wise law of the Creator, the animal system is provided with an apparatus, called the respiratory organs, the machinery of which is one of the most interesting and important in the human frame, as numerous air-cells, the lining-membrane of which extends, comparatively speaking, over a surface of 20,000 square inches, are established in the lungs for the purpose of receiving the necessary quantity of air, in the form of gases, acids or common fluids, and of expelling a similar amount of the same.

The lungs themselves have not only the disciples of *Esculapius*, but to the physiologists, been a subject of deep interest and research, as they are organs upon which the animal life depends in its various phases, and without which the process of nutrition cannot be carried on;—that is to say, the variety of food and its component parts contain in being conveyed to their legitimate somatic departments, elements which are antagonistic to the growth and development of the body, such as ammonia, hydrogen and carbonic acid.

By way of parenthesis, I mention here that ammonia is originating in the putrefactive principles of the animal and vegetable kingdoms. Its density is 589, 100 cubic inches weigh 18.26 grains. It has a very powerful, pungent odor with a strong alkaline reaction to test-paper. It condenses to the liquid form under a pressure of 6.5 atmospheres at 60°, and at a temperature of 103°F., the so gained ammoniacal liquid freezes into a colorless solid. The carbonic acid is, although it has an agreeable pungent taste and odor, a strong narcotic poison which cannot be inhaled even for a moment without insensibility following, hence the fainting away of persons in crowded halls or badly ventilated apartments where the air is largely diluted with this dangerous gas which is either generated by respiration or by the combustion of coals, especially charcoal. Its specific gravity is according to *Berzelius* 1.524, 100 cubic inches weighing 47.26 grains.

Removing thus everything impure and hurtful to the system, the respiratory organs act as neutralizing agents. Yet, although these organs which are composed of the wind-pipe (trachea) and the lungs (pulmo) with their ramifications, tubes and air-cells, are of vital importance for the sustenance of animal life, but few seem to realize the extreme delicacy of their structure and the necessity of preserving this wonderful system of somatic mechanism.

The lungs are easily affected by sudden changes of temperature or air. Hence in a country, like England for instance, where the peculiarities of climate on account of the temperate zone, depend on the obliquity of the rays of the sun; where mist, fog and rain appear in unusual quantities; where the air is strongly diluted with gases hurtful to the human system; where in fine the meteorological phenomena are of an anomalous character, inflammation of the respiratory organs with its fatal concomitants of pulmonary complaints is of frequent occurrence. In fact, the least exposure to a cold, in any country, will slowly but surely be attended with fatal consequences unless prophylactic means are used, or proper remedies speedily applied.

Not only, however, sudden changes of temperature but also the quality of air inhaled, affect the lungs. It is true, that the air-cells with the small bronchial tubes, are always capable of receiving and containing air, but the mucous membrane or the peculiar lining of these little cavities, is such in its structure, that it will only bear the presence of pure air without detriment, but not of other substances. Hence especially at dancing places, where a fine, subtle dust is generated, which passes through the wind-pipe, enters the air-cells and settles on their lining, life is exposed to danger. A tickling, scratching sensation in the trachea, accompanied by a short, dry cough to eject the impure matter, is one of the first symptoms, by and by difficulty in breathing ensues, in consequence of the air-cells being filled with dust, the proper aeration of the blood in the lungs is prevented, the cerebral system becomes deranged from the impeded circulation, and the patient is suddenly carried off in a state of *asphyxia* (apparent death).

It is true that the inhalation of dust or other hurtful substances is not always attended with direct fatal results, still the foundation of a slow but insidious and sure malady is laid, the patient, otherwise fancying himself well, is always susceptible to cold, commonly complains of breathlessness on the slightest occasion. In this manner, a person may linger for years, till at least the symptoms of a confirmed consumption are developed by a cold or some other irritating cause. Thus according to Alexander Von Humboldt, Sir Astley Cooper, Dr. Hufeland, Dr. Schoenlein, Baron Von Liebig, etc., a very simple cause often produces a fatal disease.

Yet, how often remains well-meant advice unheeded, and the thoughtless person falls a victim of his or her imprudence! How frequently exclaim individuals affected with a dry, hacking cough, on being asked for the cause of the alarming symptoms, "oh, it is nothing but a slight cold," not knowing, at the same time, that they are on the brink of grave. A person may laugh at the idea of risking his life at a dancing-party, either by inhaling dust or by leaving the ball-room in a

state of perspiration but that don't alter the case, the danger continues to exist, only unknown to the victim.

The air-cells are in some of the lower animals, on account of the sluggish and inactive respiration, few and large, as for instance in the different species of reptiles, insects and amphibious animals, but in the higher orders, such as the feline species, etc., the natural reservoirs of air are almost as completely developed as in the human system.

The respiration itself is performed by means of muscles lying between and about the ribs, and by the diaphragm; the latter is a flexible circular partition, separating the respiratory from the digestive organs, and the chest from the abdomen.

The process of the respiratory organs is either that of inspiration or respiration, the former can be noticed from the convex portion of the diaphragm being depressed and the ribs being raised or elevated; the latter or the respiration is obvious from the ribs being depressed and the central part of the diaphragm being elevated. The amount of air taken or expelled at each inspiration and respiration, can only be ascertained approximately or relatively, as it varies with the somatic constitution, the sex, age and the state of health of different individuals. A well-developed, healthy person will, according to Liebig, inhale at each inspiration forty cubic inches. The average amount of air in the lungs, while in a state of rest, is estimated at from three hundred and fifty to three hundred and ninety cubic inches. The annual amount of oxygen inhaled by a person, varies from seven hundred and fifty to eight hundred pounds, and a similar quantity is given out in the form of carbonic acid.

The process of respiration itself is so important that even every particle of air, inasmuch as it is composed of oxygen, hydrogen, nitrogen, ammonia and carburetted hydrogen, produces a chemical change in the different somatic elements. The blood on being diluted with carbonic acid, assumes a dark color, especially in organs in which the respiration is sluggish and inactive, as in individuals whose *habitus* or constitution is tainted. In well-regulated respiratory organs, the carbonic acid and aqueous matter leave as soon as they reach the air in the lungs, and are given out again, because the oxygen and hydrogen readily unite with the atmosphere.

In fact the operation of respiratory organs is carried on, on strictly scientific principles, the passage of the impure blood through minute vessels over the air-cells, the assimilation of the oxygen with the blood, after its separation from the nitrogen, and its final discharge, on being united with the hydrogen, is in strict harmony with the laws of chemistry, according to which antagonistic bodies are separated and sympathetic ones united.

\* Baron von Liebig, Professor at the University of Giessen in Germany, noted for his profound knowledge in chemistry and the Philosophical Sciences.

**From the Sandwich Islands.**

There was, from reports, some terrible storms of rain in Kanakadour in February, thunder, lightning, rain, hail and snow, having prevailed in quantity and duration beyond the memory of the "oldest inhabitants." The thermometer in Honolulu stood at 53 on the morning of February 15th. During the night previous, hail fell in Koalaupoa in quantities to be scooped up, and people crossing the Wainae Mountains that night reported that snow fell thick on the mountain peaks. In some of the thunderstorms which passed over Honolulu, the quantity of falling water is represented to have been so great that it seemed impossible for any roofing to withstand its force. The Waikiki plains were at one time nearly a complete sheet of water; but how many inches or feet of water fell, is not reported; the papers state that it was enormous.

On the 28th of January, a storm visited Waialua and adjoining places on Molokai. The sea rose to a great height, and the fish ponds along the shores were all overflowed and swept clean of their contents. The night following there was a shock of an earthquake felt. The schooner *Kalihiwai* went ashore at Kalihiwai, Kahai, February 14th, and became a total wreck.

**THE TALENT OF SUCCESS.**—Every man must patiently bide his time. He must wait; not in listless idleness, not in useless pastime, not in querulous dejection, but in constant, steady and cheerful endeavor, always willing, fulfilling his task, "that when the occasion comes he may be equal to the occasion." The talent of success is nothing more than doing what you can do, well, without a share of fame. If it comes at all, it will come because it is deserved, and not because it is sought after. It is an indiscreet and troublesome ambition which cares so much about fame, about what the world says of us, to be always looking in the face of others for approval; to be always anxious about the effect of what we do or say; to be always shouting, to bear the effect of our own voices.—Longfellow.

**The Monitor.**

The following description of the steam battery Monitor is from a New York paper:

**THE MONITOR.**

Under the act of Congress passed last Summer appropriating \$1,500,000 for iron-clad vessels for the Navy, Captain J. Ericsson, the world-renowned inventor of the caloric engine, presented proposals for a battery, to be launched within one hundred working days from the date of the contract, the impregnability of which should be tested before the heaviest guns of the enemy, and at the shortest range. The contract was signed in October, and on the one-hundred-and-first working day thereafter the Monitor was launched from the Continental Iron Works at Greenpoint, where she was constructed by C. S. Bushnell & Co., under the superintendence of Thomas F. Howland of Brooklyn.

Externally she presents to the fire of the enemy's guns a hull rising but about eighteen inches above the water, and a sort of Martello tower, twenty feet in diameter, and ten feet high. The smoke-stack during action is lowered into the hold; it being made with telescopic slides. The hull is sharp at both ends, the bow projecting and coming to a point at an angle of eighty degrees to the vertical line. It is flat-bottomed, six and a half feet in depth, one hundred and twenty-four feet long, thirty-four feet wide at the top, and is built of light three-eighth inch iron. Another, or upper hull, rests on this with perpendicular sides and sharp ends, five feet high, forty feet four inches wide, one hundred and seventy-four feet long, extending over the sides of the lower hull three feet seven inches, and over each end twenty-five feet, thus serving as a protection to the propeller, rudder, and anchor. The sides of the upper hull are composed of an inner guard of iron, a wall of white oak thirty inches thick, covered with iron armor six inches thick.

When in readiness for action, the lower hull is totally immersed, and the upper one is sunk 3 feet 6 inches, leaving only 18 inches above water. The interior is open to the bottom like a sloop, the deck, which is bomb-proof, coming flush with the top of the upper hull. No railing or bulwark of any kind appears above the deck, and the only things exposed are the turret or citadel, the wheel-house, and the box crowning the smoke-stack. The inclination of the lower hull is such that a ball to strike it in any part must pass through at least 25 feet of water, and then strike an inclined iron surface at an angle of about 10 degrees. In the event of the enemy boarding the battery they can do no harm, as the only entrance is at the top of the turret or citadel, which cannot easily be scaled, and even then only one man at a time can descend into the hull.

This turret is a revolving, bomb-proof fort, and mounts two 11-inch guns. It is protected by eight thicknesses of inch iron, overlapping so that at no one spot is there more than one inch thickness of joint. A shell-proof flat roof, of perforated plate iron, placed on forged beams, inserted six inches down the cylinder, covers the top. The sliding hatch in this cover is perforated to give light, and for musketry fire in case the battery is boarded. A spur-wheel, 6½ inches in diameter, moved by a double cylinder engine, turns the turret, guns and all, a rod connected with the running gear of the engine enabling the gunner to control the aim. The guns move in forged-iron slides across the turret, the carriages being made to fit them accurately.

These guns were furnished with 400 wrought-iron shot by the Novelty Works, each ball weighing 184 pounds and costing \$47. The balls were made by forging square blocks of iron, which were afterward turned in the lathe. Cast-iron shot would break against such a vessel as the *Merrimac*, and these shot were forged for the especial purpose of smashing through her sides.

**Gen. McClellan's Address to his Soldiers.**

HEADQUARTERS ARMY OF THE POTOMAC, }  
FAIRFAX, C. H., March 14th. }

SOLDIERS OF THE ARMY OF THE POTOMAC: For a long time I have kept you inactive, but not without a purpose; you were to be disciplined, armed and instructed.

The formidable artillery you now have, had to be created; other armies were to move to accomplish certain results. I have held you back that you might give the death-blow to the rebellion which has desolated this once happy country.

The patience you have shown, and your confidence in your General, are worth a dozen victories. These preliminary results are now accomplished. I feel that the patient labor of many months have produced their fruits. The army of the Potomac is now a real army; magnificent in material, admirable in discipline and instruction, and excellently equipped and armed. Your commanders are all that I could wish. The moment for action has arrived, and I know that I can trust in you to save our country. As I ride through your ranks, I see on your brows the sure prestige of victory. I feel that you will do whatever I ask of you. The period of inaction is passed.

I will bring you face to face with the rebels and only pray that God may defend the right. In whatever direction I may move; however strange my actions may appear to you, ever bear in mind that my fate is linked with yours and that all I do is to bring you where I know

you wish to be—on the decisive battle-field. It is my business to place you there.

I am to watch over you as a parent over his children, and you know that your General loves you from the depth of his heart. It shall be my care, as it ever has been, to gain success with the least possible loss, but I know that if it is necessary, you will willingly follow me to our graves for our righteous cause. God smiles upon us. Victory attends us yet.

I would not have you think that our aim is to be obtained without a manly struggle. I will not disguise it from you that you have brave foes to encounter, foemen well worthy of the steel which you will use so well.—I shall demand of you great and heroic exertions; rapid and long marches; desperate combats and privations. We will share all these together, and when this sad war is over we will return to our homes and feel that we can ask no higher honor than the proud consciousness that we belong to the army of the Potomac.

(Signed) GEO. B. McCLELLAN,  
Major General Commanding.

**Loss of Stock in Oregon.**

The accounts of the loss of stock in Oregon from the effects of the cold, stormy weather during the winter, and particularly in the month of February, represent greater destruction among bovines and sheep than in California. The Oregon papers are filled with sad tales about the losses sustained by stock growers and dealers in various parts of the state. The *Dallas Monitor* of March 1st, says—

Jeffreys' agent writes to him from the Yakima Valley that the "stock is still dying; not from starvation but from disease. Cattle in good order lie down and die, and from this fact I conclude there is some disease among them. The Indians have lost a great many horses—some, all they had. The snow is about two feet deep, with a heavy crust on top. But few of your cattle have died as yet and I am in hopes that we shall escape any serious loss." From the Tygh we learn that four-fifths of the cattle in that Valley are dead. Elder & McDonald have lost five hundred out of five hundred and sixty-five head; Hubbard & Jeffreys have lost but a few; Armitage, of Eugene city, has but twenty out of two hundred and fifty. Solomon Jefferys expresses the opinion that should the snow remain on the ground ten days longer, every hoof in the Valley will be lost. The Indians report everything dying at Warm Spring Reserve. The settlers are entirely out of feed in the Valley. The cattle on the various creeks in the vicinity of the Dalles are all dying off. On Three Mile creek cattle that have been fed for weeks back are dying.

The following is from the *Statesman*, published at Walla Walla:

Out of the thirty thousand head of cattle supposed to be in this Valley last Fall, it is doubtful whether five thousand head are living, and the numerous bands of sheep have almost disappeared. Out of one lot of seventeen hundred only three hundred are alive. At a moderate estimate, this Valley alone has sustained, by loss of stock, a loss of one million of dollars. The horses and mules have fared better, because they were better cared for, and this winter's experience has proved them much better calculated to endure the cold.

**Troubles of an Artist.**

A Vermont artist gives an account of his experience in taking photographs. One day a green genius walked into his saloon and examined a picture, asking at the same time:

"What's that picture on?"

"The sun," replied the photographer; "I took a view of its surface some time since, and it is said to be very accurate."

"I reckon it is. Now, said he, the sun, if I recollect right, is several millions of miles away from here—ain't it?"

"Yes," said the photographer.

"Well, you are just the man I want; give me a good picture of my brother Sam, while I wait for it."

"Certainly," said the artist; "bring him along."

"I can't," was the reply.

"Why, where is he?" asked the daguerrean.

"Well, he's in Boston to-day."

"How can I get his picture at Boston?"

"Well, look here, said the rustic; you must be an impostor, you must! You kin take a likeness of the sun, which is millions of miles away, and yet can't give me a picture of brother Sam, who is only two hundred miles off.—Yeou git out!"

The countryman walked off disgusted, and left the photographer in no very pleasant mood for the next visitor.

—A Methodist preacher was recently arrested in a village of Connecticut on the charge of stealing a ham. When the officer seized him he was in the act of saying grace over the abstracted delicacy.

—The Europeans laugh at our great battles where so many men fire away at each other for days and nobody is killed.

—Mr. Russell wrote to the *London Times* from Canada, that that country was large enough to furnish kingdoms for all the scions of royalty in Europe.